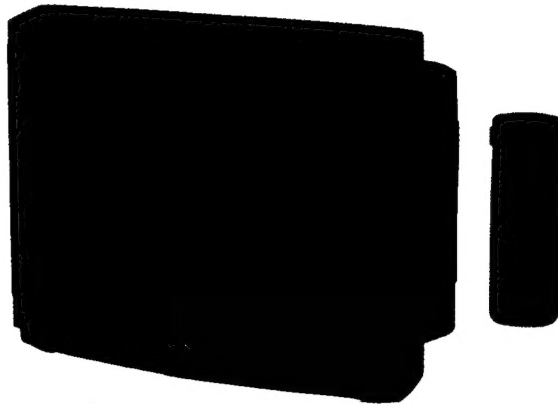


KV-A2912U

RM-816

SERVICE MANUAL

UK Model
Chassis No. SCC- E23G-A



AE-1C CHASSIS

MODELS OF THE SAME SERIES	
KV-A2912U	
KV-E2522U/E2922U	

SPECIFICATIONS

Television system
Color system
Stereo system
Channel coverage
Picture tube

B/G/H
PAL, SECAM, NTSC3.58, NTSC4.43
GERMAN stereo
VHF: E1-E10.
Black Trinitron tube
Approx. 72.4 cm
(Approx. 68 cm picture measured diagonally)
110°-degree deflection
⊖ 1 21-pin connector:
CENELEC standard including RGB input.
⊕ 2 21-pin connector:
including S video input
Front : ⊖ 3 Audio and video input jacks:
phono jack.
Including S Video input
Y: 1Vp-p±3dB 75ohm
C: 0.3Vp-p±3dB 75ohm
21-pin connector: CENELEC standard
Headphones jack: stereo minijack
External speaker terminals: 2-pin DIN
Audio output jacks: phono jack (output
dependent upon TV settings)

Sound output 30 W + 30 W
Power consumption 167Wh
Dimensions incl. speakers Approx. 761×568×512 mm (w/h/d)
Weight incl. speakers Approx. 55kg

【RM-816】
Remote control system infrared control
Power requirements 3V dc
2 batteries IEC designation
R6 (size AA)
Approx. 75×221×23mm(w/h/d)
Approx. 230g (including batters)
Accessories supplied IEC designation R6 batteries (2)
Supplied accessories RM-816 Remote Commander (1)
IEC designation R6 batteries (2)

Design and specifications are subject to change without notice.

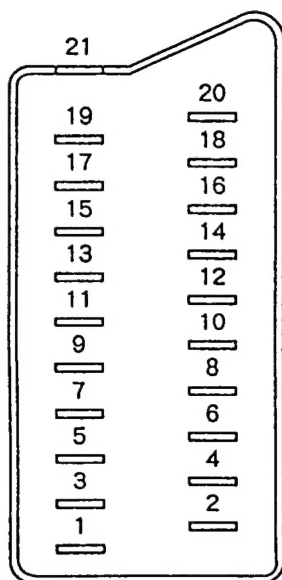
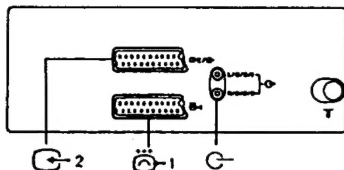
Inputs

Outputs

TRINITRON® COLOUR TV
SONY®



21 pin connector (①-1, ②-2)



Pin No.	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
2	○	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
3	○	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
7	○	●	Blue input	0.7V ± 3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5 – 12V): Part mode Low state (0 – 2V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2 nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal: 0.7V ± 3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	–	Red input	0.7V ± 3dB, 75ohms, positive
	–	○	(S signal) chroma input	0.3V ± 3dB, 75ohms, positive
16	○	●	Blanking input (Y's signal)	High state (1 – 3V) Low state (0 – 0.4V) Input impedance: 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
	○	–	Video input	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
20	–	○	Video Input/Y (S signal)	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
21	○	○	Common ground (plug, shield)	


○ connected ● unconnected (open)

* at 20Hz – 20kHz

4 pin connector (③-3)

Pin No.	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB, 75ohms, positive Sync: 0.3V ± 1dB
4	C (S signal) input	0.3V ± 3dB, 75ohms, positive

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

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NICAM Reception

Reception of NICAM broadcast is possible if the NICAM adaptor (available at your Sony dealer) is installed in the TV.

When the NICAM broadcast is being received, indicators illuminate according to the sound being heard.

Select the sound you want to hear by pressing the A/B bilingual button. Each time the A/B bilingual button is pressed, the sound will change as indicated with arrows in the following chart.

○ means that the indicator lights up.

× means that the indicator does not light up.

The NICAM sound being broadcast	The sound you hear (Select with the A/B bilingual button.)	Indicators		
		A	B	⊕* (NICAM)
Stereo	Stereo ←	○	○	○
	↓ Regular	×	×	○
A+B (Bilingual)	A ←	○	×	○
	↓ B	×	○	○
	↓ Regular	×	×	○
A	A ←	○	×	○
	↓ Regular	×	×	○
Regular only	Regular	×	×	×

* When the NICAM adaptor is installed, the ⊕ space sound indicator will function as the NICAM indicator (the space sound function will not be affected). When the NICAM broadcast is being received, the NICAM indicator lights up even when the regular sound has been selected.

When you turn on the TV, what sound will be heard?

When the Regular sound and the NICAM sound are the same, the NICAM sound will be heard.

When the Regular sound and the NICAM sound are different, the Regular sound will be heard.

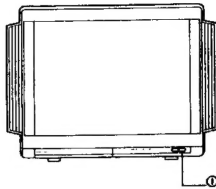
Note

The West German stereo programs can be received as explained in the supplied Operating Instructions.

SECTION 1 GENERAL

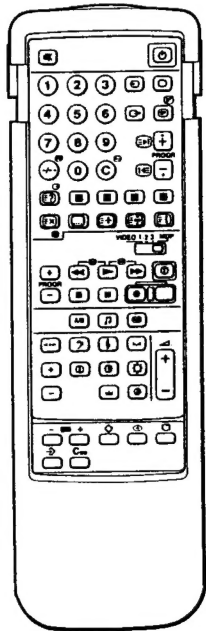
1-1. TURNING THE TV UNIT ON AND OFF

After you have completed the basic preparation your TV is ready to be connected to the mains power supply (220/240V~, 50Hz).



Turning the TV unit ON		
Action		Result
1 Press on the TV.		The TV will turn on. Note: If the screen remains blank, the TV may be in the standby mode. Press to switch it on.

Turning the TV unit OFF		
A Temporarily		
Press to enter the standby mode.		The TV will be in the standby mode. To return to the TV mode press .
B Completely		
Press on the TV set.		The TV will be turned off.



1-2. TV CHANNEL PRESETTING

After installing the TV set, TV channels must be preset.

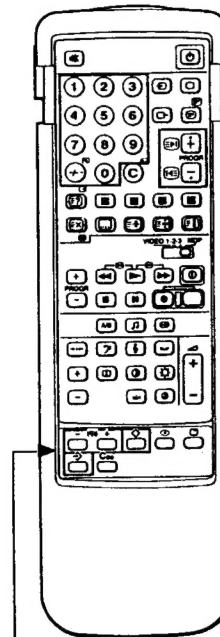
TV broadcasting stations broadcast their programmes on certain fixed frequencies (channels). In order to receive these programmes it is necessary to search for the relevant broadcasting station and to set record it as a channel. The "programme number" is the number that the user decides to associate with a certain channel.

For channel settings there are 60 positions available in the memory. In this way all stations broadcasting within the user's country can be received and recorded as a channel.

TV channels automatic presetting

If you are unfamiliar with the transmission frequency of the channels you wish to preset, refer to the section "TV channels automatic presetting". However, if you want to tune them using the frequency of each channel, go to the section "Direct TV channel setting".





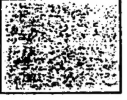
To select a button on the "complete" side, take out the remote control unit from its case to reveal the preset buttons, as shown in the illustration.



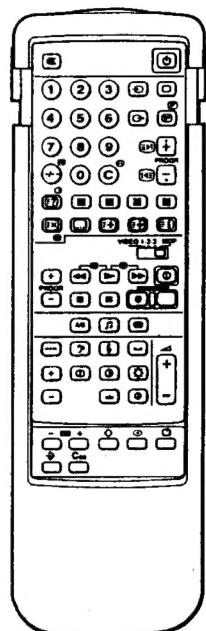
Note: Utilizzate i tasti indicati nell'illustrazione solo quando preselezionate canali.

Operation		Result
1 Press to begin the preselection.		The programme number flashes.
2 Press PROG + or the remote control unit number buttons to select the channel number to which you want to preset the station.	1 2 3 4 5 6 7 8 9 0	The programme number on the screen changes.
3 To search for broadcasting stations press + and - buttons.		When a broadcasting station is tuned correctly, the search will stop. If you want to skip it, press + or - again.
4 Press to memorize the channel to that which the broadcasting station is tuned.		All data disappears from the screen.
5 To memorize other broadcasting stations repeat steps from 1 to 4.		

Direct TV channel setting


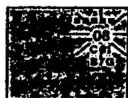
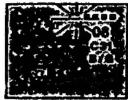


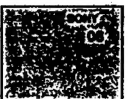
Operation	Result
1 Press → to begin the presetting.	 The programme number begins to flash on the screen.
2 Press PROGR +/- or the number buttons on the remote control unit to select the channel number to which you want to preset the station.	 The programme number on the screen changes.
3 Press C. If you wish to select a cable station, press C twice.	 Indication "C-" ("S-" for cable stations) flashes on the screen.
4 By using the number buttons of the remote control unit select the channel number, always with two figures (for "4" press "04").	 The channel number changes on the screen.
5 Press ◊ to memorize the channel to which the station is tuned.	 All indications disappear from the screen.

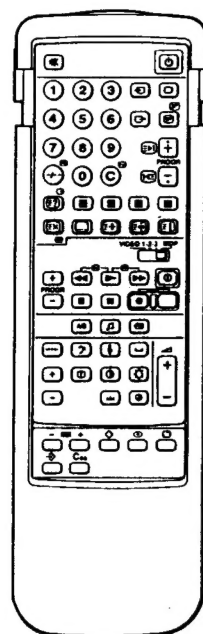
To memorize other broadcasting stations repeat the above procedure.



Broadcasting station identification

By associating a name with a certain broadcasting station it is possible to avoid having to remember, each time, in which channel number that particular station has been memorized.
Five different characters are available for station identification.

Operation	Result
1 By using PROGR + or -, or the number keys of the remote control unit, select the programme number to be set for identification.	 The programme number to be set for identification appears on the screen.
2 Press →	 The number flashes on the screen.
3 Press □	 The first indication line flashes on the screen.
4 Press the + or - buttons to select a letter of the alphabet, a number, or a blank space.	 Alphabetic letters, numbers or a blank space (" ") appear on the screen, in that order.
5 Press □	 In this way the first character has been set, and the following position now flashes on the screen.
6 Repeat steps 4 and 5, and fill all five available spaces.	
7 Press ◊.	 All indications disappear from the screen, except the programme number. All indications remaining on the screen have been memorized.



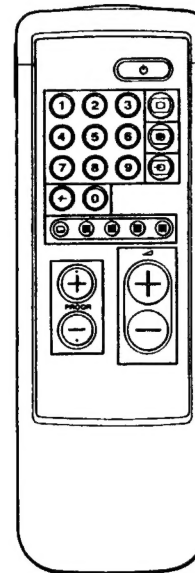
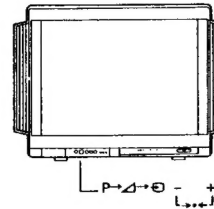
Temporary channel tuning

It is possible to temporarily memorize a channel, even if it has not been preset.

Operation	Result
1 Press C. Press C twice for a cable station.	"C" ("S" for cable stations) indication appears on the screen.
2 Using the number keys or the remote control unit select the channel number, always with two figures (e.g., "04" for channel "4").	The channel will be received, but it will not be set as a programme number.

1-3. BASIC FUNCTIONS

Per aprirlo premete
sulla freccia. (↓)



This section introduces you to the basic control functions which are available on the "simple" side of the remote control unit.

Programme selection

Before selecting programmes make sure that TV channels have been memorized.

Operation	Result
Press PROGR +/- buttons or the number keys of the remote control unit. To select a 2-figure number press +/- button. E.g., if you wish to select number 23, press +/- first, and then 2 and 3.	The selected programme number appears on the screen.

Volume control

Operation	Result
Press Δ + or -.	The volume indication appears on the screen.

Use of additional functions

Use of other functions with the TV set buttons

It is also possible to select programmes and to adjust the volume by using $P \rightarrow \Delta \rightarrow \ominus$ and $\rightarrow \bullet \bullet \bullet +$ or - buttons, located on the front panel of the TV set. In this case, press first $P \rightarrow \Delta \rightarrow \ominus$ until the indication P (channel) or Δ (volume) appears on the screen, and then press $\rightarrow \bullet \bullet \bullet +$ or - buttons.

Use of teletext service

Press \ominus . To return to the TV mode, press \odot . For further information on the teletext service

Selection of the video input

Press \odot . To return to the TV mode, press \odot . For further details,

Skipping channels

Using the PROGR +/- buttons you can skip unused programme numbers. However, the skipped numbers may still be called up using the number buttons.

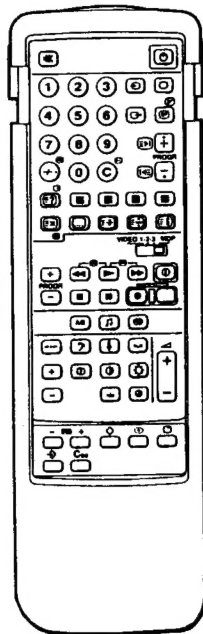
Operation	Result
1 Press \rightarrow to begin presetting.	The programme number begins to flash on the screen.
2 By using the PROGR + and - buttons, or the number keys of the remote control unit, select the programme number you wish to skip.	The programme number changes.
3 Press Coo.	Under the programme number, the lowest channel number appears.
4 Press \diamond .	All indications under the programme number disappear from the screen. The skipped programme number will be memorized.

Manual fine tuning

If the picture is not perfect, it is possible to fine tune it manually.

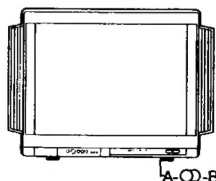
Operation	Result
Press $\rightarrow \bullet \bullet \bullet +$ or - repeatedly until the picture is at the optimum.	The indication $\rightarrow F \rightarrow$ appears on the screen.
Press \rightarrow to start preselection.	The programme number starts flashing on the screen.
Press \diamond .	Manual fine tuning has been memorized.

Note: Manual fine tuning will be reset when the channel is selected again.

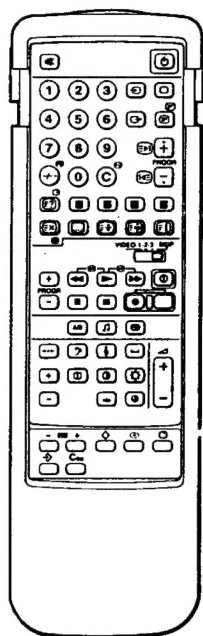


1-4. SPECIAL FUNCTIONS

This section explains the use of functions for adjusting pictures and sound. Use the "complete" side of the remote control unit.



A-CD-B
















Use of special functions

The following functions can be used.

Function	Operation	Reset
Indication display	Press	Press again.
Sound muting	Press	Press again.
Language selection for bilingual programmes.	Press A/B. The selected language is displayed by the relevant indication on the screen.	Press A/B.
Sound adjustment for music programmes.	Press	Press again.
Use of special sound effects.	Press	Press again.
Time display (only during teletext broadcasting).	Press	Press again.

Picture and sound adjustment

Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps below.

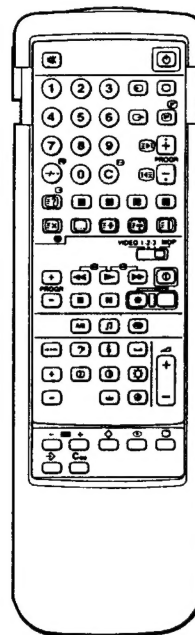
To Adjust:	Press:	Then:	Result: (+ ↔ -)
Picture:			
Colour Intensity			More ↔ Less
Contrast			More ↔ Less
Brightness			Bright ↔ Dark
Hue (for NTSC only)			Reddish ↔ Greenish
Sharpness			More ↔ Less
Sound:			
Bass			More ↔ Less
Treble			More ↔ Less
Balance			Left ↔ Right

To reset the picture and sound to factory set levels, press .

On the set: Press the and buttons simultaneously.

1-5. USE OF THE TELETEXT SERVICE

Through the teletext service a great deal of information can be received at any time. Broadcasting stations make this service available through TV broadcasts. To use the teletext service, use the green keys on the "complete" side of the remote control unit. When the "simple" side of the remote control unit is used, only the basic functions are available.



How to display teletext service

Operation	Result
1 Select the channel you want to watch.	The channel changes on the screen.
2 Press	If there is no teletext signal, the indication "Page 100" appears on the screen.
3 Use the number keys of the remote control unit to insert the three figures corresponding to the desired teletext page. Note In case of a mistake, press any three numbers, and then repeat the operation with the correct numbers.	The selected page number appears on the screen. After a few seconds, the selected page appears on the screen.
To return to normal TV programmes: Press .	
To change teletext channel: First press to return to the TV mode, and then repeat steps 1 to 3.	

Note: A weak TV signal may cause trouble in the use of teletext.

Use of special teletext functions

Required function	Operation	Result (on the screen)
Page index required.	Press (INDEX).	Page index appears.
Sub-pages required (page 888).	Press .	The sub-page appears (page 888).
Access to previous or following pages.	Press (PAGE +) or (PAGE -).	The preceding or the following page appears.

Required function	Operation	Result (on the screen)
Superimposition of the teletext on the TV programme.	In the TV mode, press twice. To return to the normal teletext function press again.	Teletext information will appear superimposed on the TV programme.
To prevent page changes due to page updating.	Press (STILL). Press (TXT/MIX) to return to the normal function.	The (STILL) symbol appears on the screen.
Magnification of teletext characters.	Press once to magnify the upper half of the screen. Press twice to magnify the lower half of the screen. By pressing the button three times the normal vision is restored.	The upper or the lower half of the page is magnified.
Display of hidden information (answers to quizzes, etc.).	Press (RIV). Press again to hide the answers.	The information is displayed.
Watching a programme while the teletext searches for the required page.	1. Ask again for the page.	The number is displayed.
	2. Press	TV programme is displayed.
	3. When the required page has been found, the page number will be displayed.	P201
	4. Press to display the page.	The desired page will be displayed.
Display of a page at a preset time.	1. Request the page.	The selected page will be displayed.
	2. Press (MEM.T).	In the lower part of the screen the indication "T*****" appears.
	3. Set the required time by using the number keys, and by inputting four figures (e.g. 0730 for "7:30").	The required time is displayed on the screen.
	<p>To watch TV programmes until a preset time Press (CANC.). At the required time, the selected page appears in the upper part of the screen. Press to display the page.</p> <p>To cancel the request Display the teletext page and then press (CANC.M.).</p>	

Note: Depending on the teletext service, certain functions may not be available.

Use of the FASTEXT function

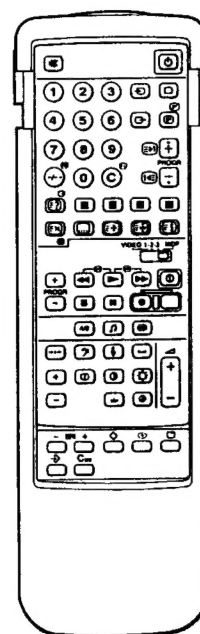
The FASTEXT function allows rapid access, at the touch of a single button, to the teletext functions. In the lower part of the screen, a colour coded index will be displayed when a FASTEXT teletext page is broadcasted. Each colour corresponds to the colored keys on the remote control unit.

Operation

Operation	Result
Press one of the coloured keys on the remote control unit corresponding to the coloured indications of the FASTEXT teletext page.	The selected teletext page appears on the screen.

Note:

The correct use of the FASTEXT function depends on the signal being broadcast by the TV stations. Some TV stations may not broadcast FASTEXT teletext signal.



1-6. CONNECTIONS AND OPTIONAL FUNCTIONS

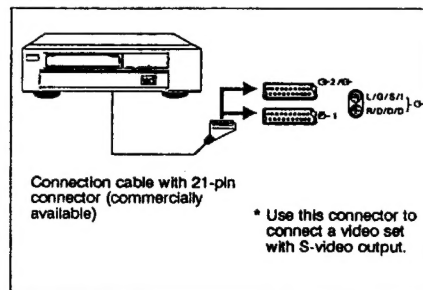
This TV set may be connected to other audio/video machines, such as videocameras, VTRs, videodisc players, or stereo systems.

Connection to an external audio/video system

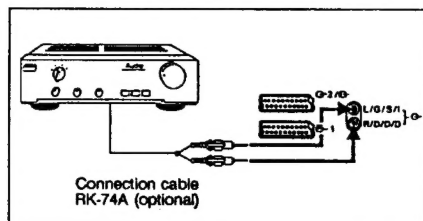
This TV set incorporates three groups of connectors, for input and output to the TV signal. Each group has the following characteristics.

Connector	Input signal	Output signal
Ⓔ-1	Normal audio/video signal or RGB signal	TV tuner audio/video signal
Ⓔ-2/Ⓔ-3	Normal audio/video signal and S-video signal	Audio/video signal from a selectable source
Ⓔ-3, Ⓔ-4, Ⓔ-5 front panel	Normal audio/video signal and S-video signal	No signal

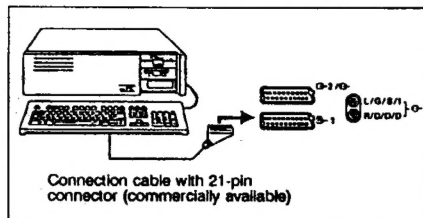
Connection of a TV set



Connection of an audio unit

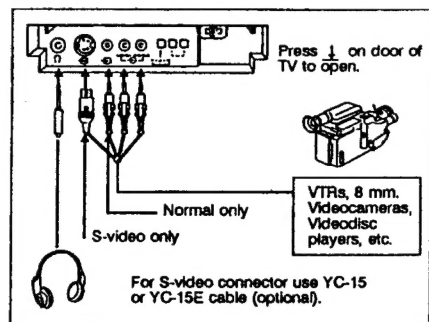


Connection to a computer with RGB output



Temporary connection of video apparatus

For a temporary connection (e.g. of a videocamera) use the front panel terminals.



Connection of a videotape recorder through the T connector

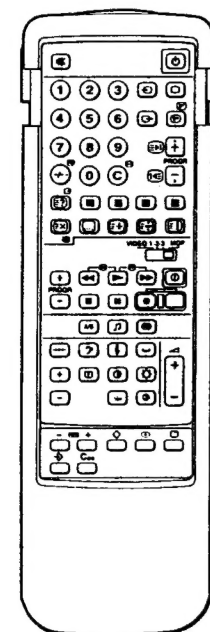
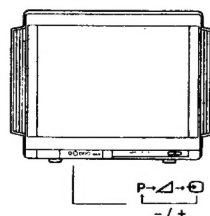
Connect the antenna input (AERIAL-IN) of the TV set to the antenna output (AERIAL-OUT) of the videotape recorder.

S-video input (Y/C input)

The video signal is formed by two separate signals: the luminance (Y) and the chrominance (C). Through the separation of the two signals it is possible to improve picture quality (luminance in particular), preventing reciprocal interference. This TV set features two S-video sockets able to directly receive this type of signal.

Pictures with distortion

Move the TV set away from the videotape recorder if pictures or sound become distorted.



Video programme playback

Using the input selector, pictures coming from a videotape recorder connected to the TV sets input may be played back.

Operation

Operation	Result
Select the desired video input by pressing Ⓔ repeatedly.	The symbol of the selected input appears on the screen (see table below).
Press Ⓔ button to return to TV mode.	

Selectable inputs

Symbol	Selected input
Ⓔ 1	Audio/video signal from Ⓔ-1 connector.
Ⓔ	RGB signal from Ⓔ-1 connector.
Ⓔ 2	Audio/video signal from Ⓔ-2/Ⓔ-3 connector.
Ⓔ 2	S-video signal (from a VTR with S-video output) from Ⓔ-2/Ⓔ-3 connector.
Ⓔ 3	Audio/video signal from Ⓔ, Ⓔ-Ⓔ connector located on the front panel.
Ⓔ 3	S-video signal from S-video Ⓔ (4 pin) connector located on the front panel.
Input can be selected also with the P, +, - buttons of the TV set.	
In this case, first select Ⓔ, and then press the + / - buttons to select the desired input.	

Selection of video output

The Ⓔ-2/Ⓔ-3 connector may output 4 video signals. Select the outgoing video signal in the following way.

Operation

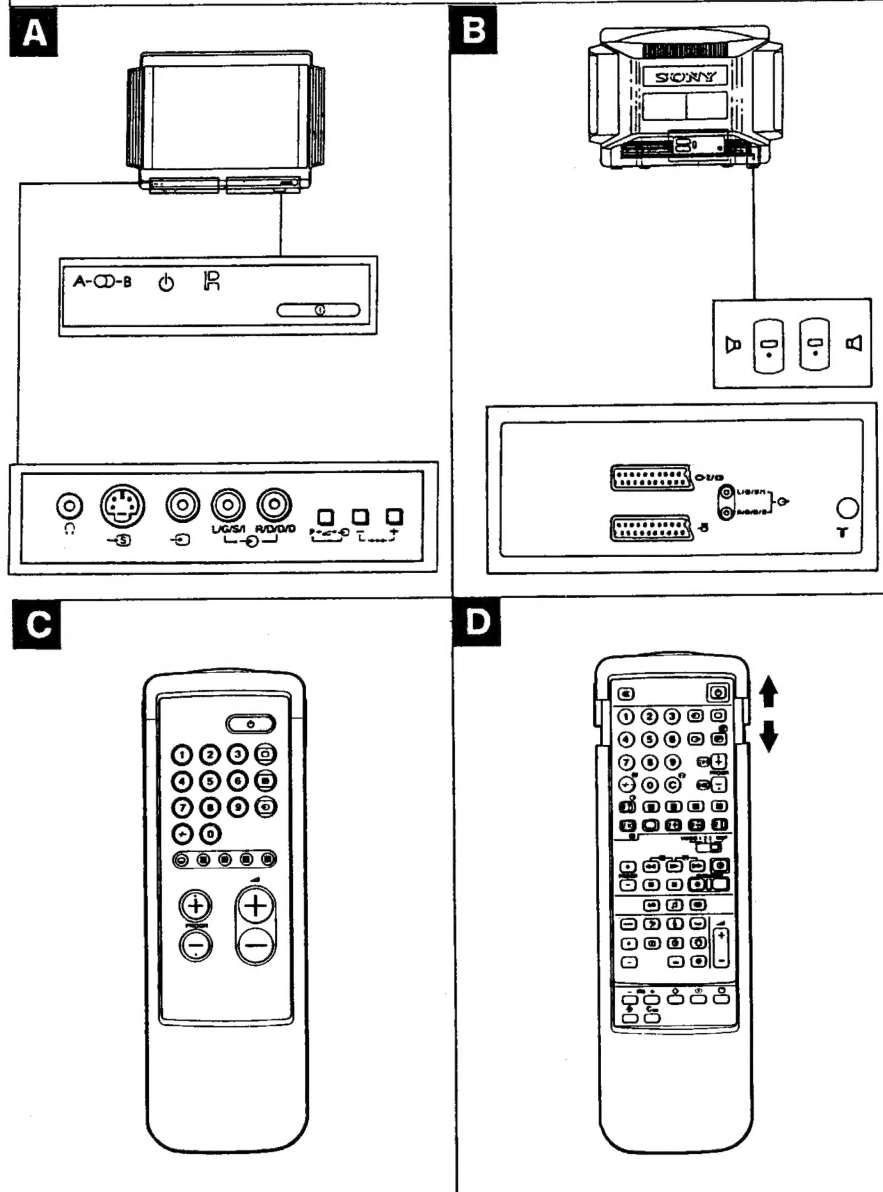
Operation	Result
Press Ⓔ repeatedly to select the desired video output.	The selected video output symbol appears on the screen (see the table following).

Output signal

Symbol	Selected output
1 Ⓔ	Audio/video signal from Ⓔ-1 connector.
2 Ⓔ	Audio/video signal from Ⓔ-2/Ⓔ-3 connector.
3 Ⓔ	Audio/video signal from Ⓔ and Ⓔ-Ⓔ connectors.
TV Ⓔ	Audio/video signal from T-type antenna connector T.

1-7. GENERAL INFORMATION

Components identification



This section briefly describes controls of the TV set and the remote control unit, and their relevant functions.


A TV set front panel	
Indication	Description
	Power switch
	Standby switch
A - D - B	Bilingual function indications
	Headphones connector (stereo mini-jack)
	Input connectors (S-video/video/audio)
	Function selector (programme/volume/input)
	Function adjustment keys

B TV set rear panel	
Indication	Description
	Speaker connectors (upper: left speaker; lower: right speaker)
	Connector 2, Euro AV (SCART, 21-pin). S-video In/Video In/TV/video out signals.
	Connector 1, Euro AV (SCART, 21-pin). RGB In/Video In/TV/out signals.
	Audio output connectors (RCA pin)
	Antenna connector (of IEC standard)

C Remote control unit — simplified side	
Indication	Description
	Input selector
	Teletext service key
	FASTEXT operation buttons
	TV set power switch and TV mode selector
	Standby key
1,2,3,4,5, 6,7,8,9,0	Number keys
	Channel selection key/ 2-figure programmes
	Volume adjustment key
PROGR +/-	Programme selection key

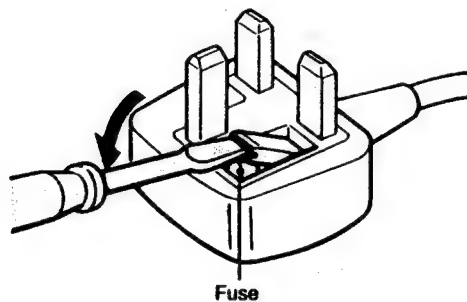
D Remote control unit — complete side	
Indication	Description
	Sound muting key
	Standby key
1,2,3,4,5, 6,7,8,9,0	Number keys
	Input selector
	TV set power switch and TV mode selector
	Output selector
	Teletext key
	Music programme key
A/B	Bilingual programmes language selection
	Channel selection key/ 2-figure programmes
C	Channel direct selection key
	Special sound effect key
	Time display
	Teletext operation keys
	FASTEXT operation buttons
	Display key
	Reset key
	Volume adjustment keys
PROGR +/-	Programme selection keys
	Image and audio adjustment keys
VIDEO 1/2/3, MDP	Video unit selector
	Video units function key
Coo	Programme cancelling key
	Channel presetting key
	Channel tuning keys
	Channel storing keys
	Broadcasting stations identification key

• **CAUTION**

The flexible mains lead is supplied connected to a B.S. 1363 fused plug having a fuse of 5 amp capacity. Should the fuse need to be replaced, use a 5 AMP FUSE approved by ASTA to BS 1362, i.e., carries the  mark.

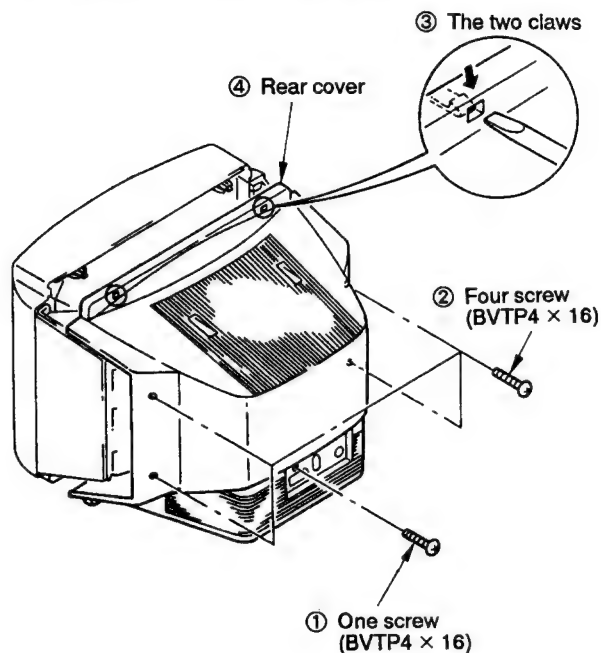
How to replace the fuse

Open the fuse compartment with the blade screwdriver, and replace the fuse.

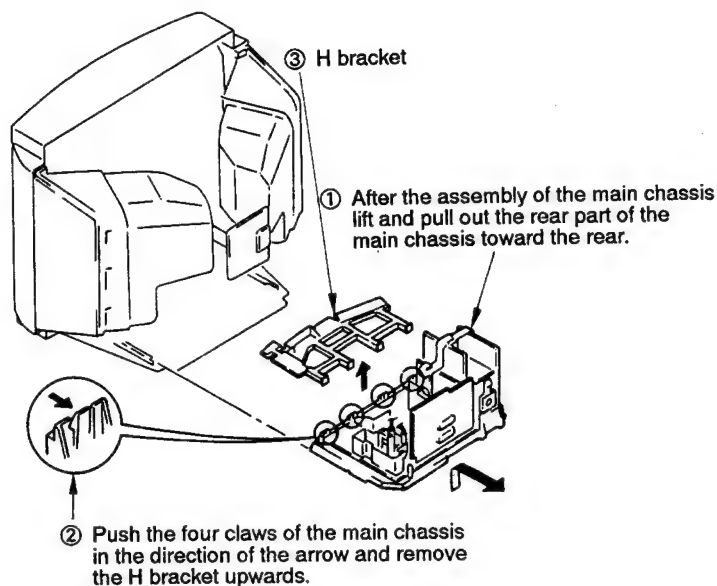


SECTION 2 DISASSEMBLY

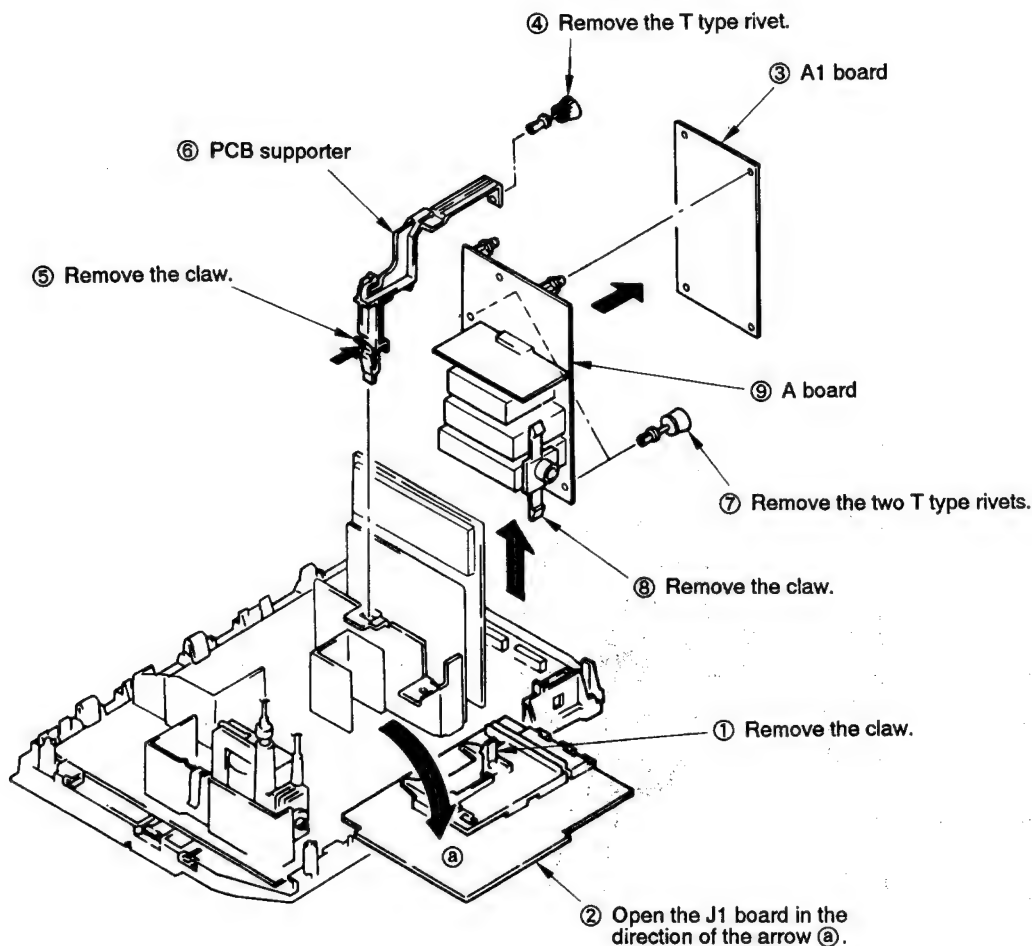
2-1. REAR COVER REMOVAL



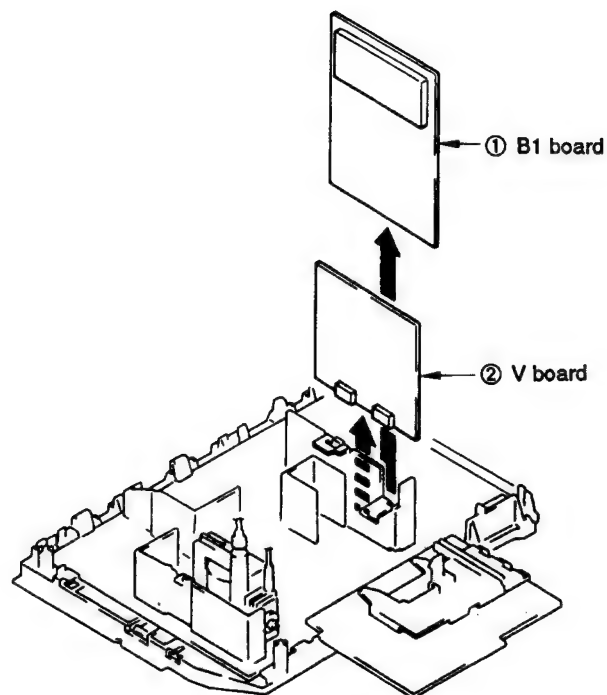
2-2. CHASSIS ASSEMBLY REMOVAL



2-3. A, A1 AND J1 BOARDS REMOVAL



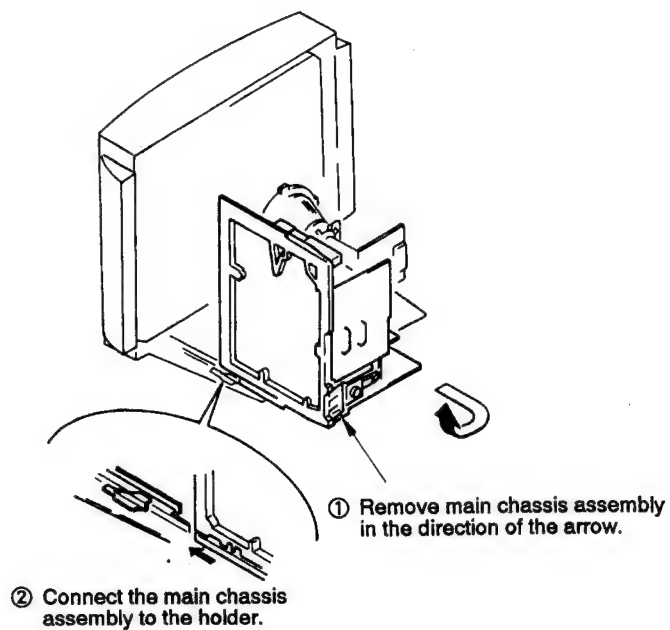
2-4. B1 AND V BOARDS REMOVAL



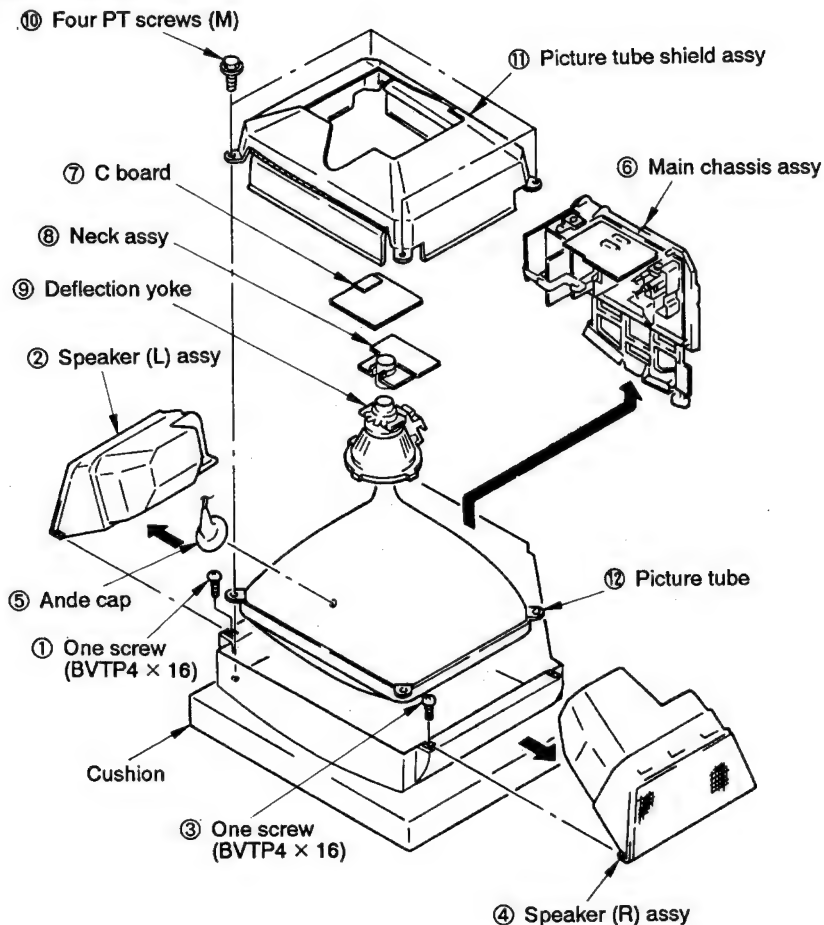
Note: 10 pin extension cable (S-0945-001-0)

2-5. SERVICE POSITION

※ Remove the H bracket from the main assembly and then perform the following servicing.



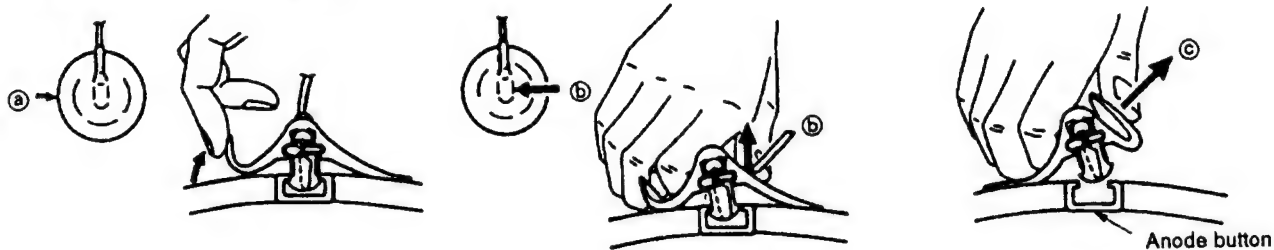
2-6. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

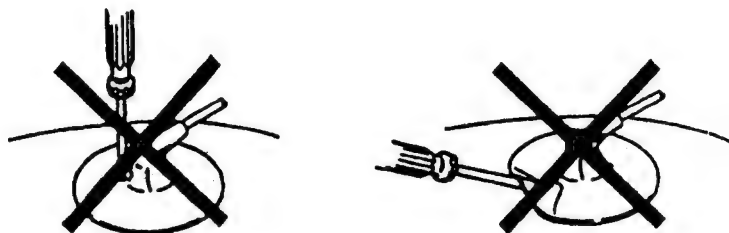
• REMOVING PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by the arrow ①.
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.



SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way:

● Contrast80%
(or remote control normal)
⚙ Brightness50%

- Carry out the following adjustments in this order:

1. Beam landing
2. Convergence
3. Focus
4. White balance

Note: Testing equipment required

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Preparations:

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
Contrast } normal
Brightness }
2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
(See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
(See Figure 3-4.)

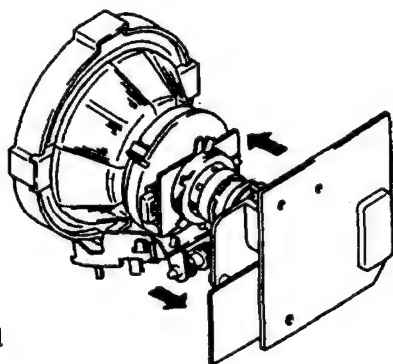


Fig. 3-1

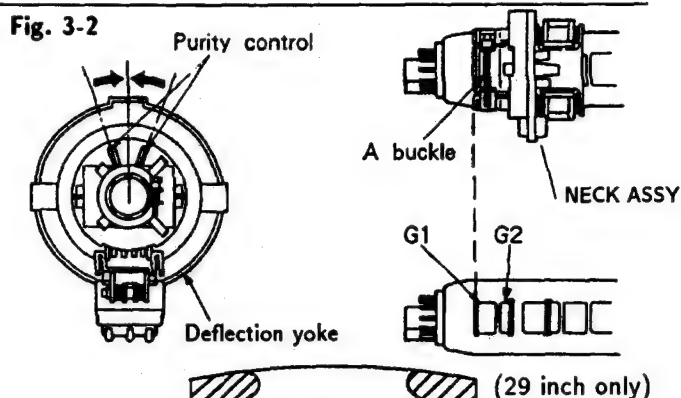


Fig. 3-3

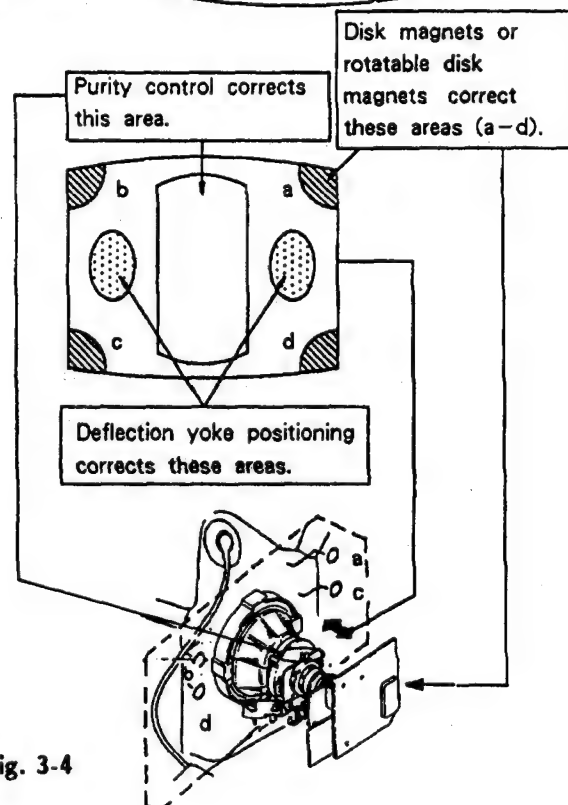
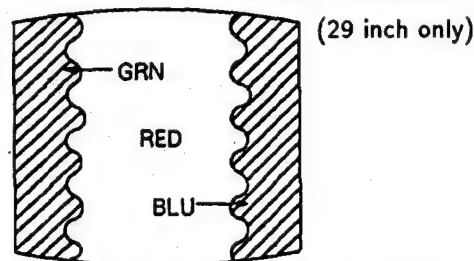


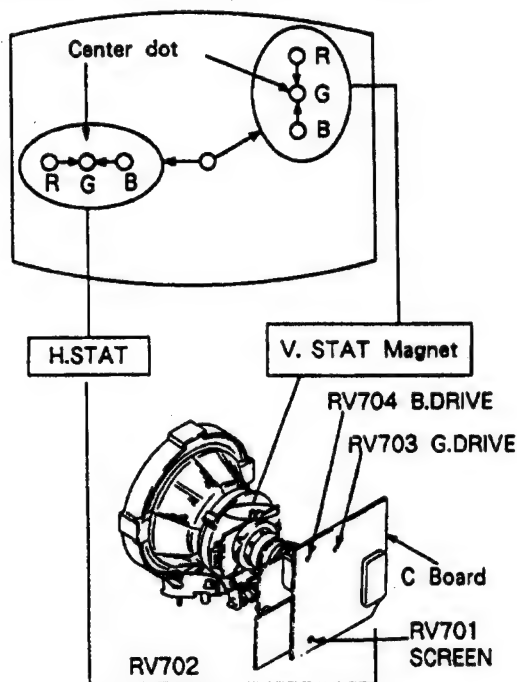
Fig. 3-4

3-2. CONVERGENCE

Preparations :

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and vertical static convergence

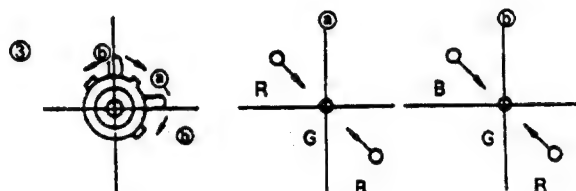
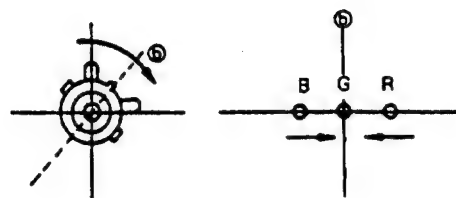
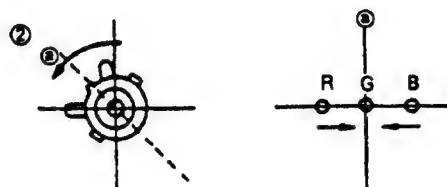
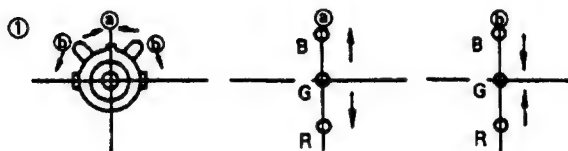


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below. (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

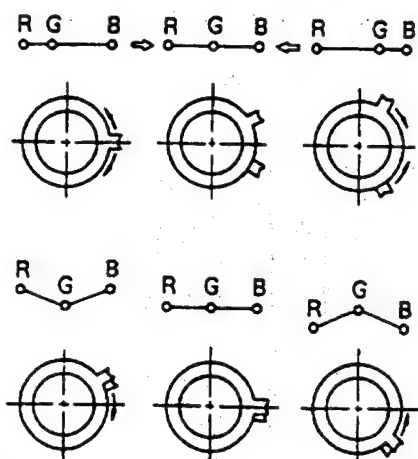
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



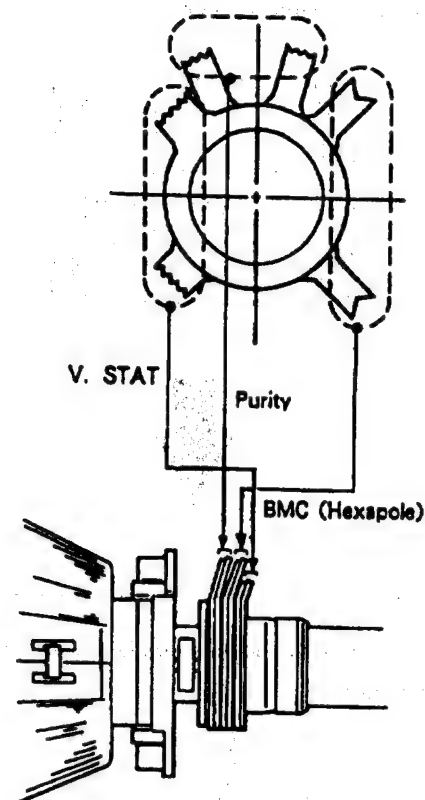
4. If the V.STAT magnet is moved in the direction of the ② and ③ arrows, the red, green, and blue points move as shown below.



● Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking. Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

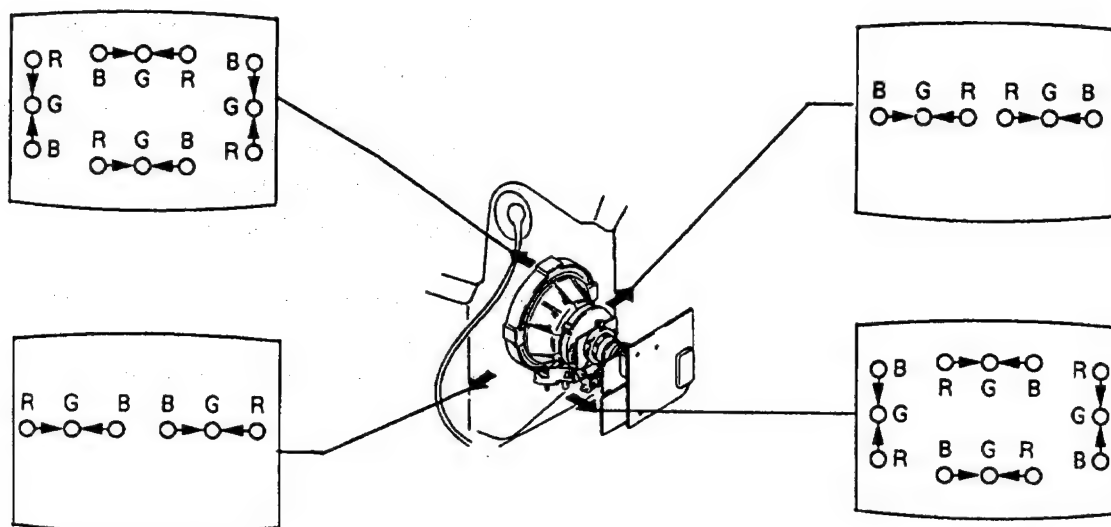


(2) Dynamic convergence adjustment

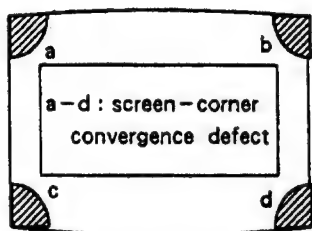
Preparations :

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

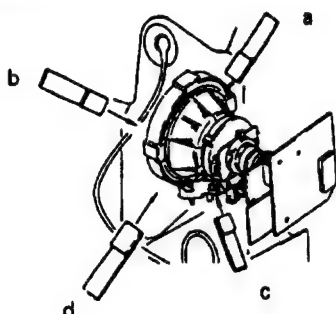
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



(3) Screen corner convergence



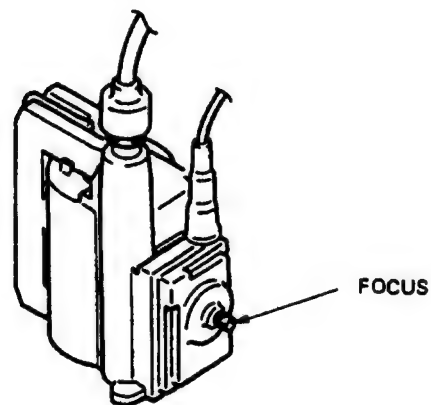
Install the permalloy assembly for the section with faulty.



Permalloy

3-3. FOCUS

Adjust the focus to optimize the screen.



3-4. WHITE BALANCE

[Screen G2 setting]

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

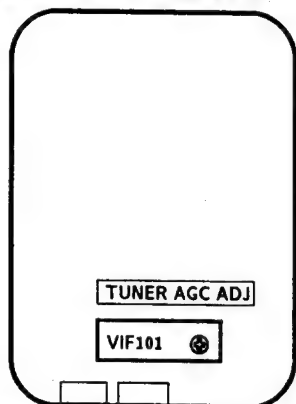
[White balance adjustment]

1. Input an all-white signal from the pattern generator.
2. Set the picture brightness and color controls to their normal levels.
3. Use the RV704 (B Drive) and RV703 (G Drive) to adjust white balance.

In the adjustments below, have the picture color and brightness settings at their normal levels unless there is a specific instruction to the contrary.

SECTION 4 CIRCUIT ADJUSTMENTS

4-1. A BOARD ADJUSTMENTS

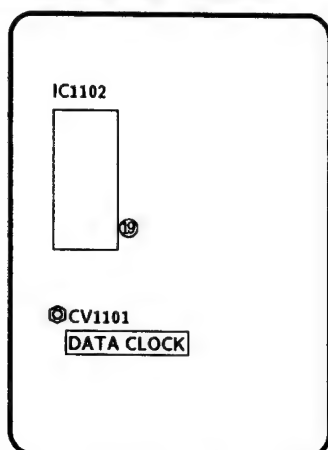


A BOARD (COMPONENT SIDE)

TUNER AGC ADJUSTMENT (AGC VR)

1. Align with an appropriate signal between stations.
2. Adjust AGC VR so that snow noise and cross modulation just disappear from the picture.

4-2. A1 BOARD ADJUSTMENT

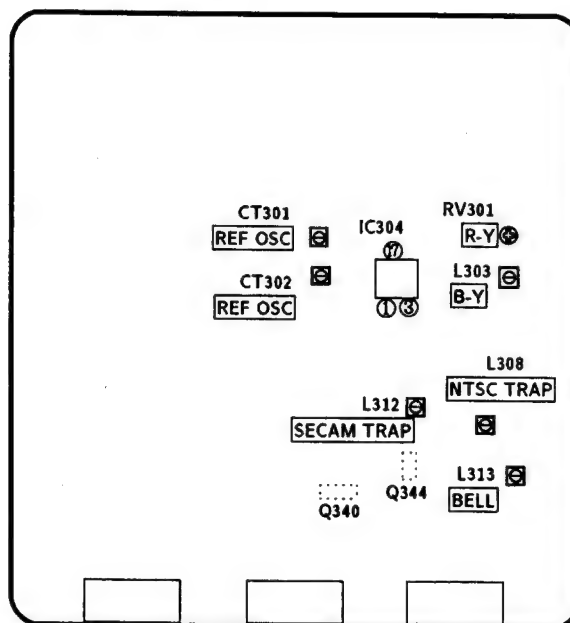


A1 BOARD (COMPONENT SIDE)

DATA CLOCK Adjustment (CV1101)

1. Tune in a no signal.
2. Connect a frequency counter to pin ⑩ of IC1102 (PCLK) through a probe of 10:1.
3. Adjust CV1101 (DATA CLOCK) so that frequency becomes $728.022\text{KHz} \pm 1\text{Hz}$.

4-3. B1 BOARD ADJUSTMENTS



B1 BOARD (COMPONENT SIDE)

REFERENCE OSCILLATOR ADJUSTMENT (CT302 8.8MHz)

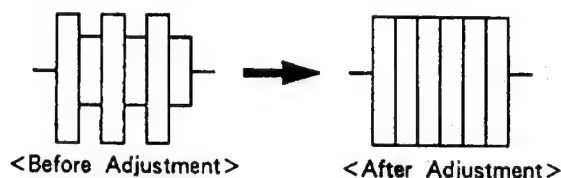
1. Input a PAL color bar signal.
2. Ground pin ⑪ of the IC304.
3. Adjust CT302 to obtain synchronization.

REFERENCE OSCILLATOR ADJUSTMENT (CT301 7.16MHz)

1. Input an NTSC color bar signal.
2. Ground pin ⑪ of IC304.
3. Adjust the CT301 to obtain synchronization.
4. Remove the jumper grounding pin ⑪ of IC304.

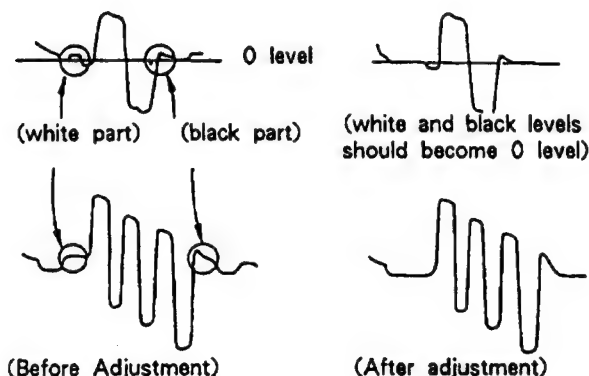
BELL FILTER ADJUSTMENT (L313)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q344.
3. Adjust L313 so that the waveform is flat.



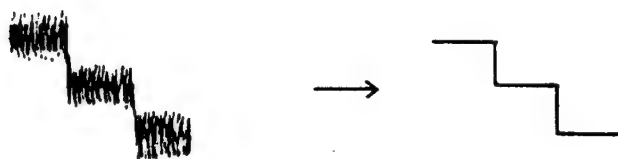
DISCRIMINATION ADJUSTMENTS (RV301 and L303)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to pin ① of IC304.
3. Adjust RV301 until the white and black sections of the waveform at pin ① are at the 0 level.
Connect the oscilloscope to pin ③ of IC304.
4. Adjust L303 until the white and black sections of the waveform at pin ③ are at the 0 level.
5. the waveform at pin ③ are at the 0 level.



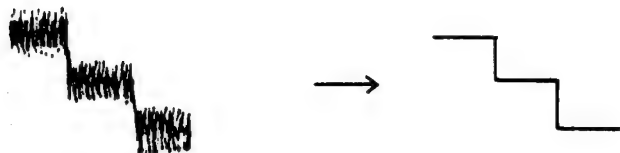
SECAM TRAP (L312)

1. Input a SECAM color bar signal.
2. Connect oscilloscope to Q340 emitter and adjust L312 to minimize color carrier on the Y-signal.

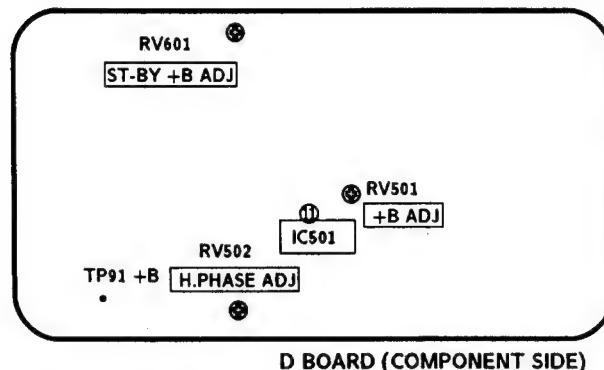


NTSC TRAP (L308)

1. Input a NTSC (3.58) color bar signal.
2. Connect oscilloscope to Q340 emitter and adjust L308 to minimize color carrier on the Y-signal.



4-4. D BOARD ADJUSTMENTS



+B ADJUSTMENT (RV501)

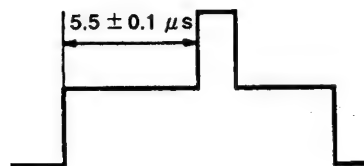
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain $135 \pm 0.2V$.

ST-BY +B ADJUSTMENT (RV601)

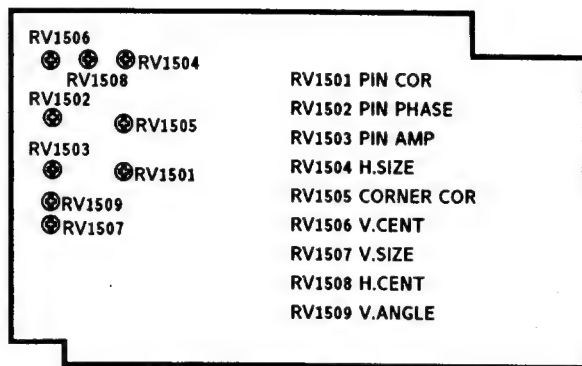
1. Put the system into ⏻ standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain $135 \pm 3V$.
4. Take the system out of ⏻ standby mode (remote commander).

H.PHASE ADJUSTMENT (RV502)

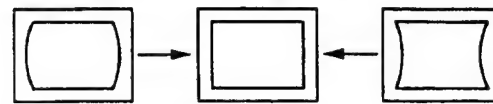
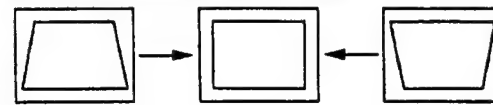
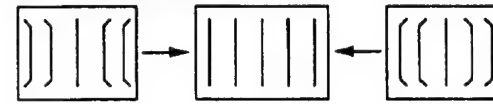
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ① (SCP) of IC 501.
5. Rotate RV502 to adjust to $5.5 \pm 0.1 \mu s$.



4-4. J1 BOARD ADJUSTMENTS



J1 BOARD (COMPONENT SIDE)

RV1508
H. CENT (HORIZONTAL CENTER)RV1504
H. SIZE (HORIZONTAL SIZE)RV1506
V. CENT (VERTICAL CENTER)RV1507
V. SIZE (VERTICAL SIZE)RV1509
V. ANGLE (VERTICAL ANGLE)RV1503
PIN AMP (PINCUSHION AMPLIFIER)RV1502
PIN PHASE (PINCUSHION PHASE)RV1501
PIN. COR (PINCUSHION CORRECT)RV1505
CORNER COR (CORNER CORRECT)

4-5. SECONDARY ADJUSTMENTS

SUB BRIGHTNESS ADJUSTMENT

1. Set the system to receive a test pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ● contrast setting.
6. Adjust the ☼ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander.
(SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
Set the ● color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the ☼ brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press → • ← on the remote commander to put the system into normal mode.

4-7. SECONDARY ADJUSTMENTS

SUB BRIGHTNESS ADJUSTMENT

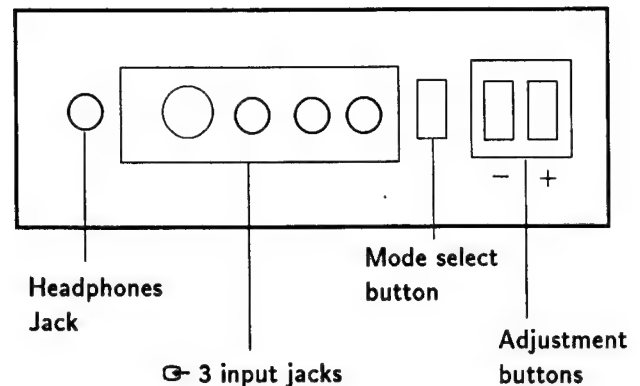
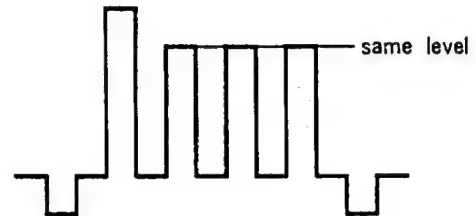
1. Set the system to receive a test pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ① contrast setting.
6. Adjust the ⚙ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander.
(SUB mode is released)

If there is no test color pattern

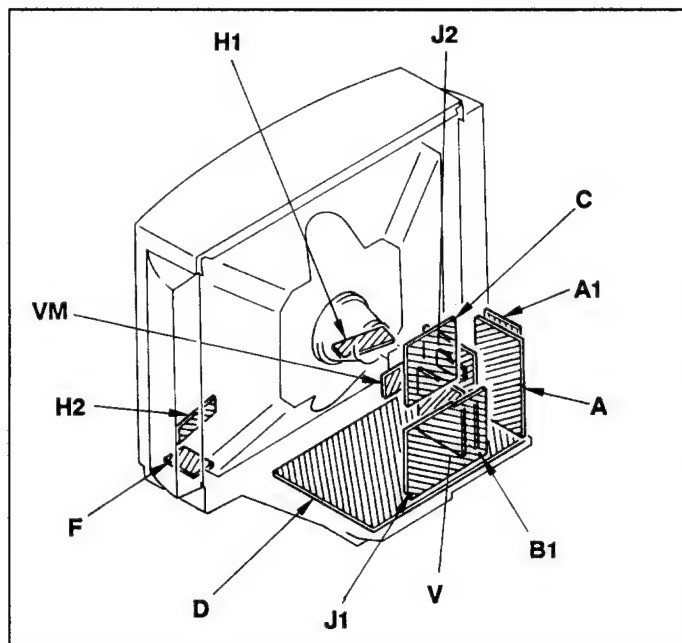
1. Set the system to receive a color pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
Set the ④ color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the ⚙ brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press → • ← on the remote commander to put the system into normal mode.

SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the ◇ (store) button of the remote commander. (SUB mode is released)



5-2. CIRCUIT BOARDS LOCATION




5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS – Conductor Side –

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE







- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M Ω digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- — : B+ bus.
- → : signal path.(RF)

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μ F unless otherwise noted. pF: μ F 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
k Ω = 1000 Ω , M Ω = 1000K Ω
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4 W

-  : nonflammable resistor.
-  : internal component.
-  : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : earth-ground.
-  : earth-chassis.
-  : no mounted.

4-6. SECONDARY ADJUSTMENTS

SUB BRIGHTNESS ADJUSTMENT

1. Set the system to receive a test pattern.
2. Press $\rightarrow \bullet \leftarrow$ on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the \bullet contrast setting.
6. Adjust the \odot brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the \diamond (store) button of the remote commander.
(SUB mode is released)

If there is no test color pattern

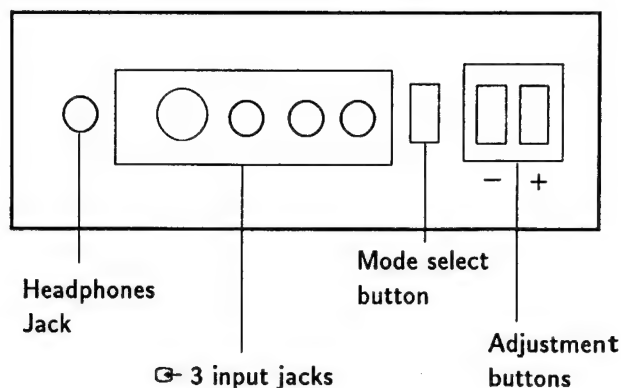
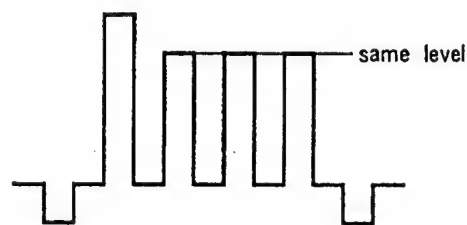
1. Set the system to receive a color pattern.
2. Press $\rightarrow \bullet \leftarrow$ on the remote commander to put the system into normal mode.
Set the \oplus color to its normal state.

3-5. Steps are the same as above.

6. Since 20 IRE is nearly blue, adjust the \odot brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press $\rightarrow \bullet \leftarrow$ on the remote commander to put the system into normal mode.

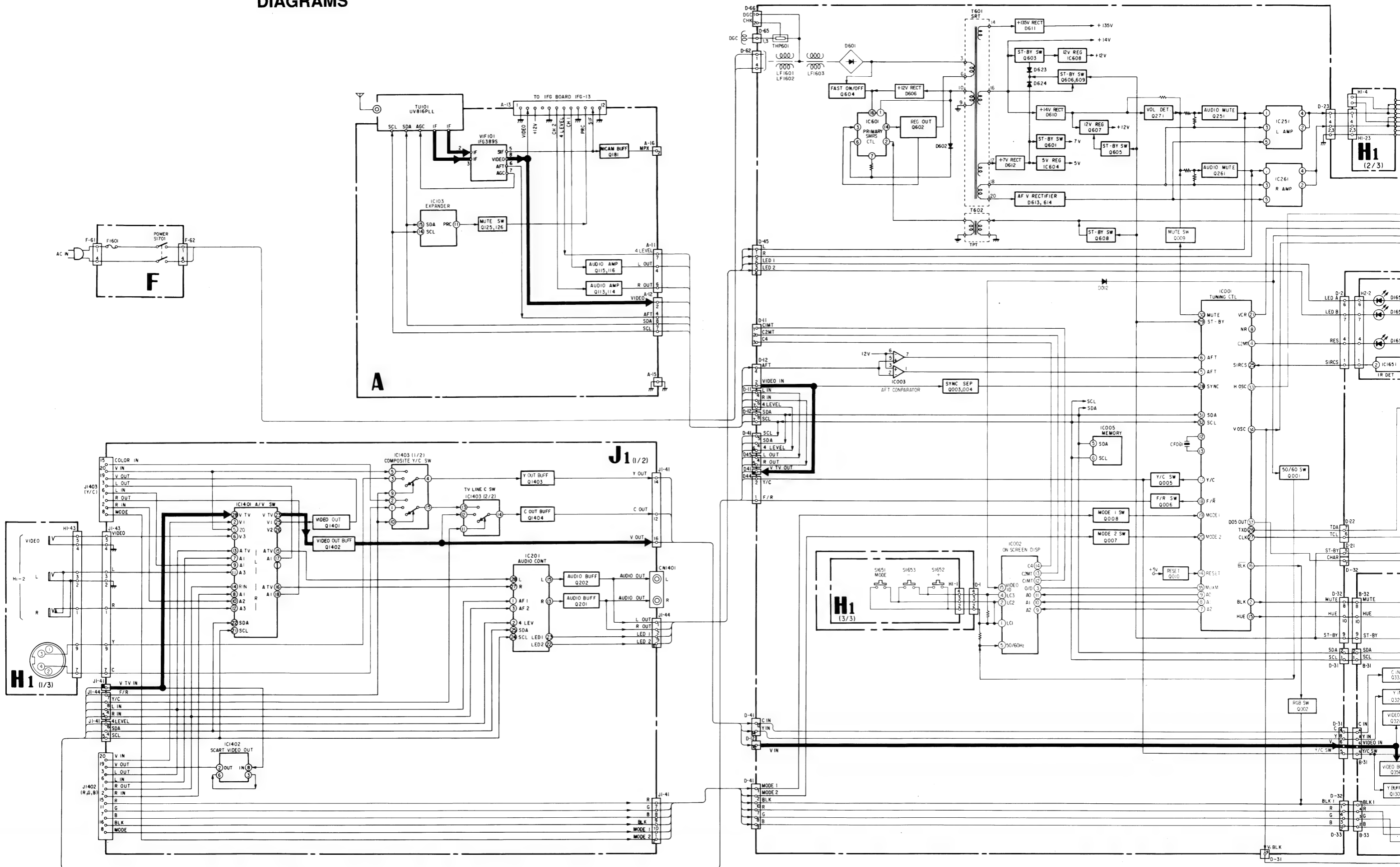
SUB COLOR ADJUSTMENT

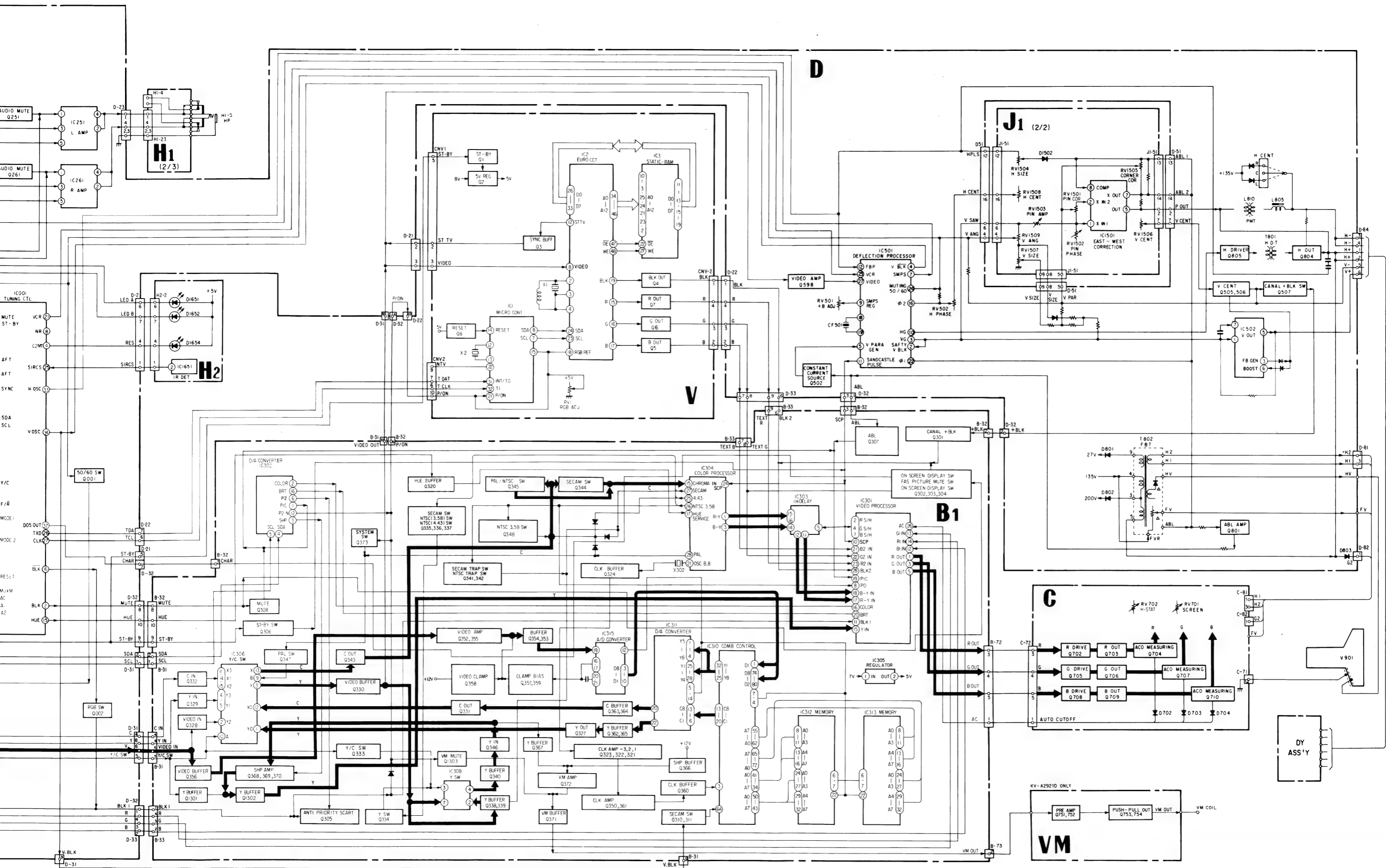
1. Set the system to receive color bars.
2. Press $\rightarrow \bullet \leftarrow$ on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the \diamond (store) button of the remote commander. (SUB mode is released)



5-1. BLOCK DIAGRAM

SECTION 5
DIAGRAMS





D

J1 (2/2)

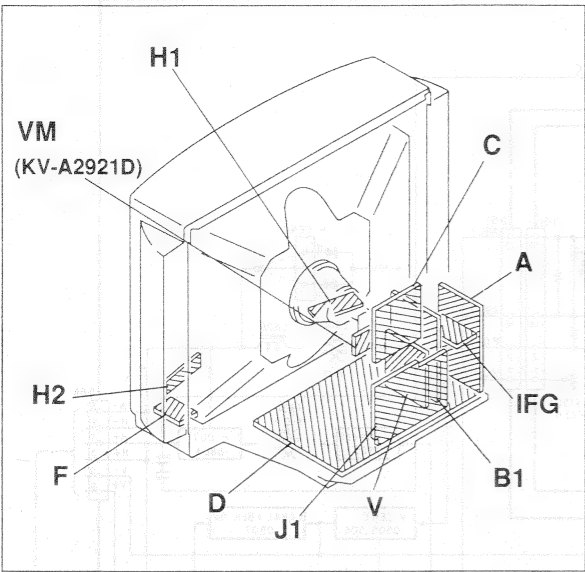
B1

C

VM

DY ASS'Y

5-2. CIRCUIT BOARDS LOCATION



Reference information		
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
COIL	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE
CAPACITOR		

5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

— Conductor Side —

- Note:**
- All capacitors are in μF unless otherwise noted.
pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
 - All electrolytics are in 50V unless otherwise specified.
 - All resistors are in ohms.
 $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{K}\Omega$
 - Indication of resistance, which does not have one for rating electrical power, is as follows.
Pitch: 5 mm
Rating electrical power 1/4W
 - METAL FILM (:RN) resistors in 1%, 1/6W unless otherwise specified.
 - : nonflammable resistor.
 - : internal component.
 - : panel designation, or adjustment for repair.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - : earth-ground.
 - : earth-chassis.
 - All voltages are in V.
 - Voltage are dc with respect to ground unless otherwise noted.
 - Readings are taken with a 10 M Ω digital multimeter.
 - Readings are taken with a color-bar signal input.
 - Voltage variations may be noted due to normal production tolerance.
 - : B+ bus.
 - : signal path. (RF)
 - Circled numbers are waveform references.

Note:
The components identified by shading and mark are critical for safety. Replace only with part number specified.

H1

CONTROL SW,
AV INPUT,
HEADPHONE

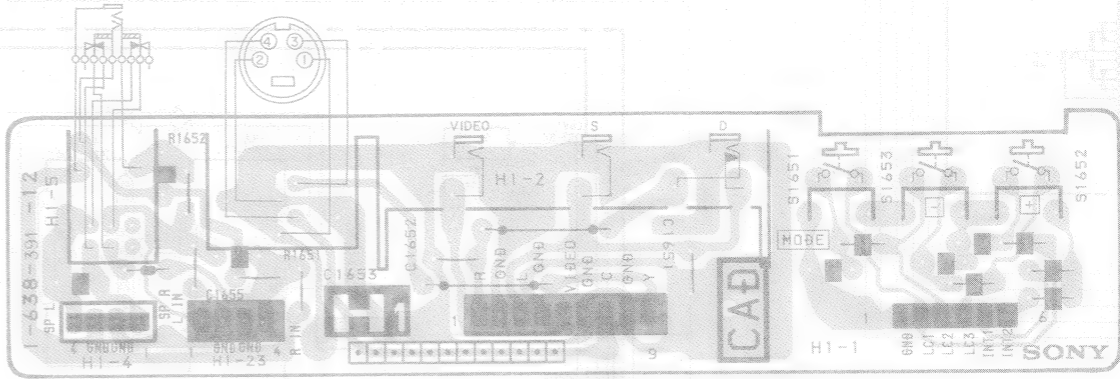
H2

SIRCS RECEIVER,
INDICATOR

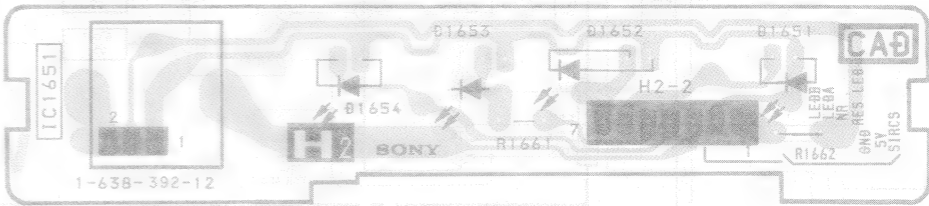
F

[AC IN, POWER SW]

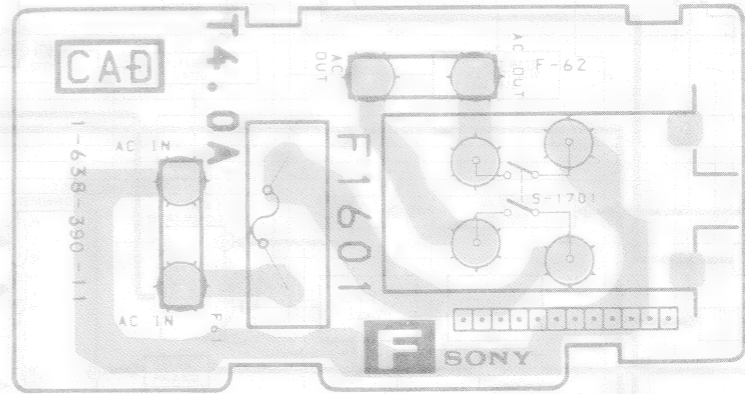
— H1 Board —



— H2 Board —



— F Board —



A

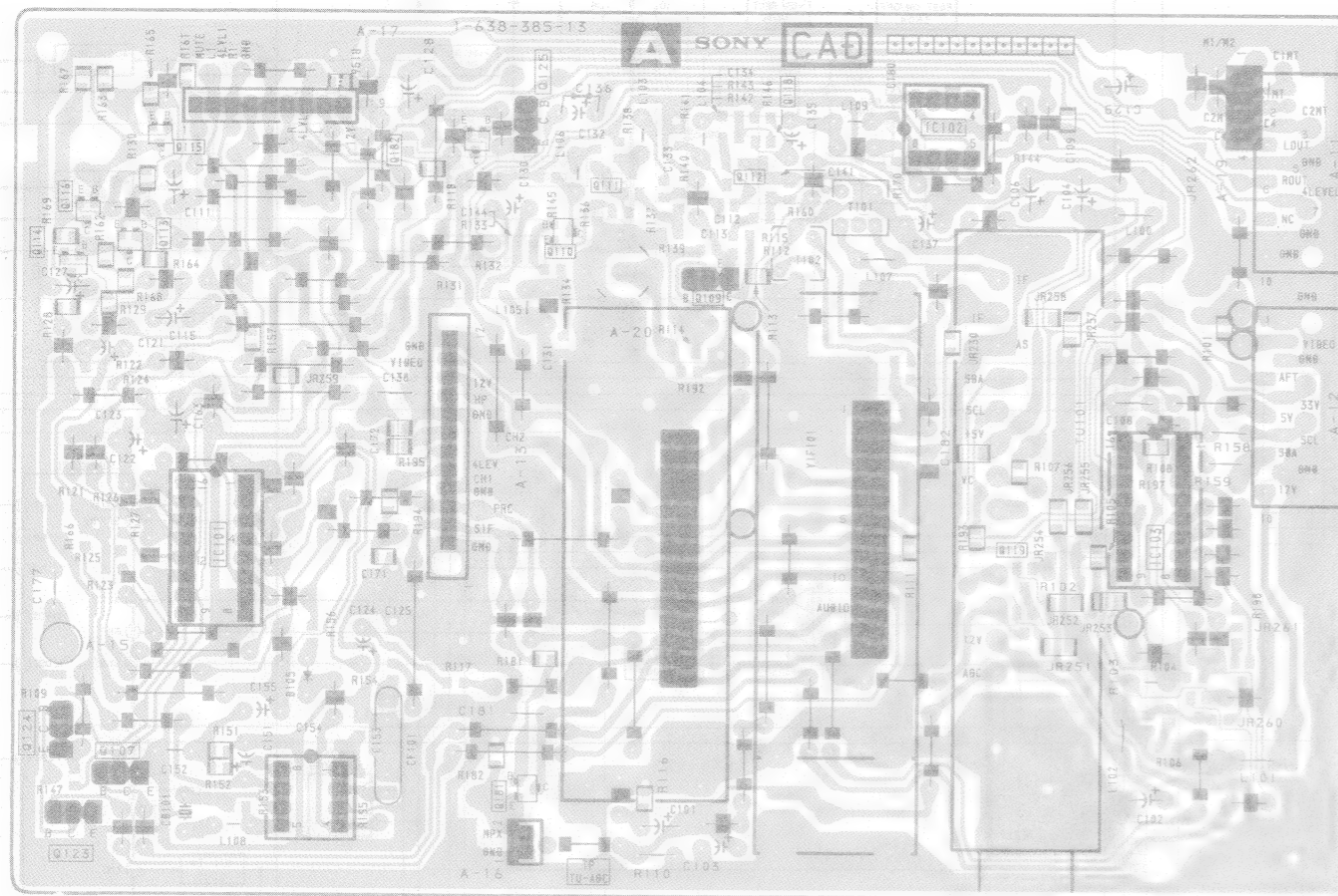
[TUNER]

— A Board —

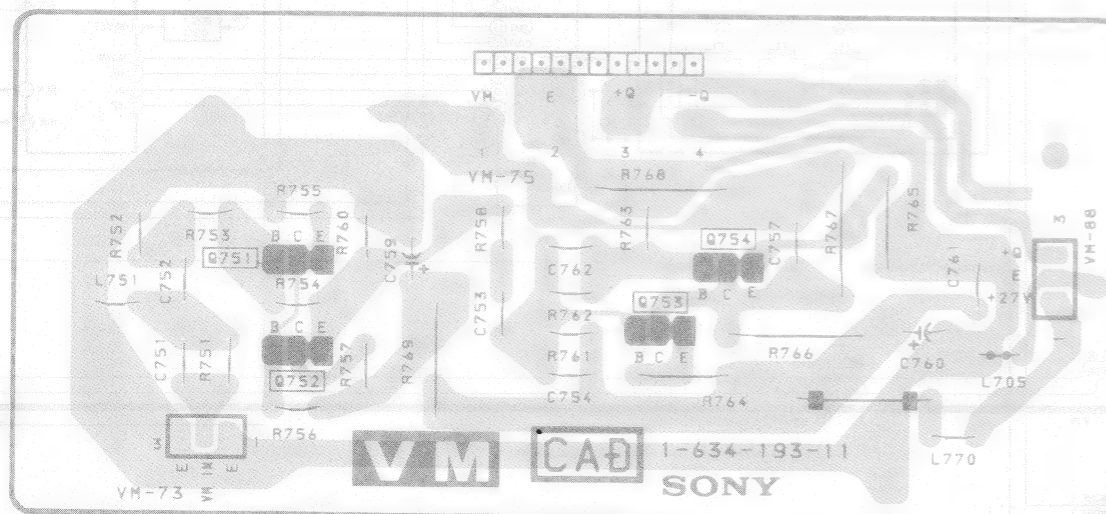


A [TUNER, SIF, VIF] **VM** [VM AMP]

— A Board —

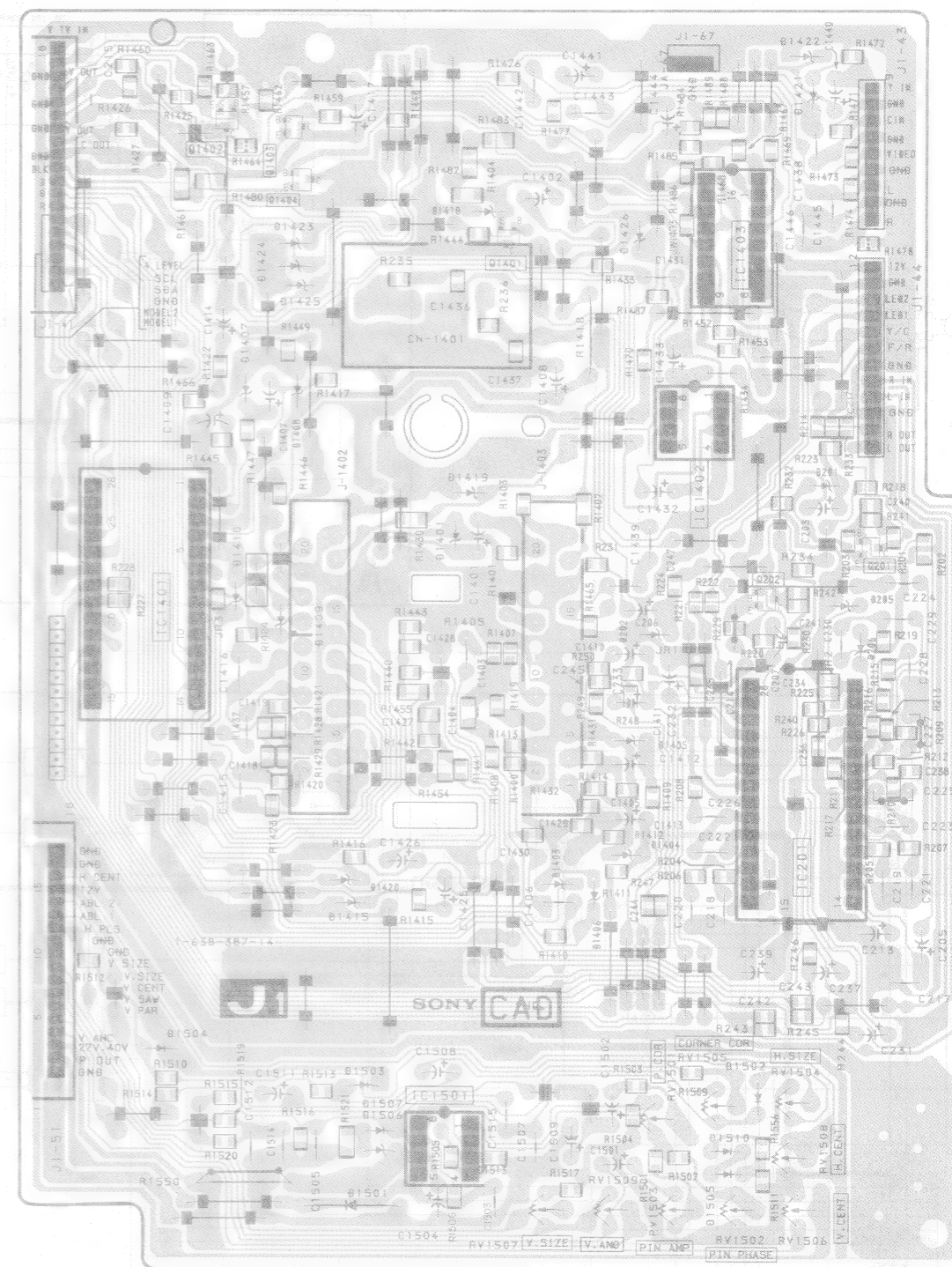


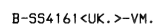
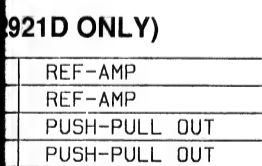
— VM Board — (KV-A2921D ONLY)



J1 [AUDIO CONTROL, AV INPUT
Y/C INPUT, SCART VIDEO OUT,
EAST-WEST CORRECTION]

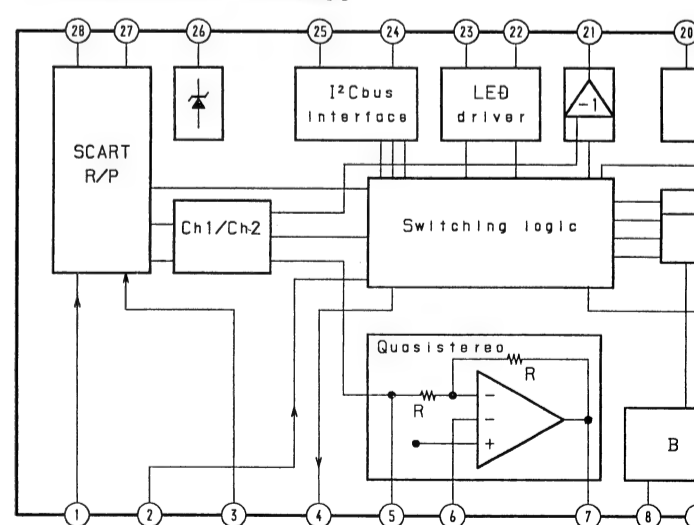
— J1 Board —

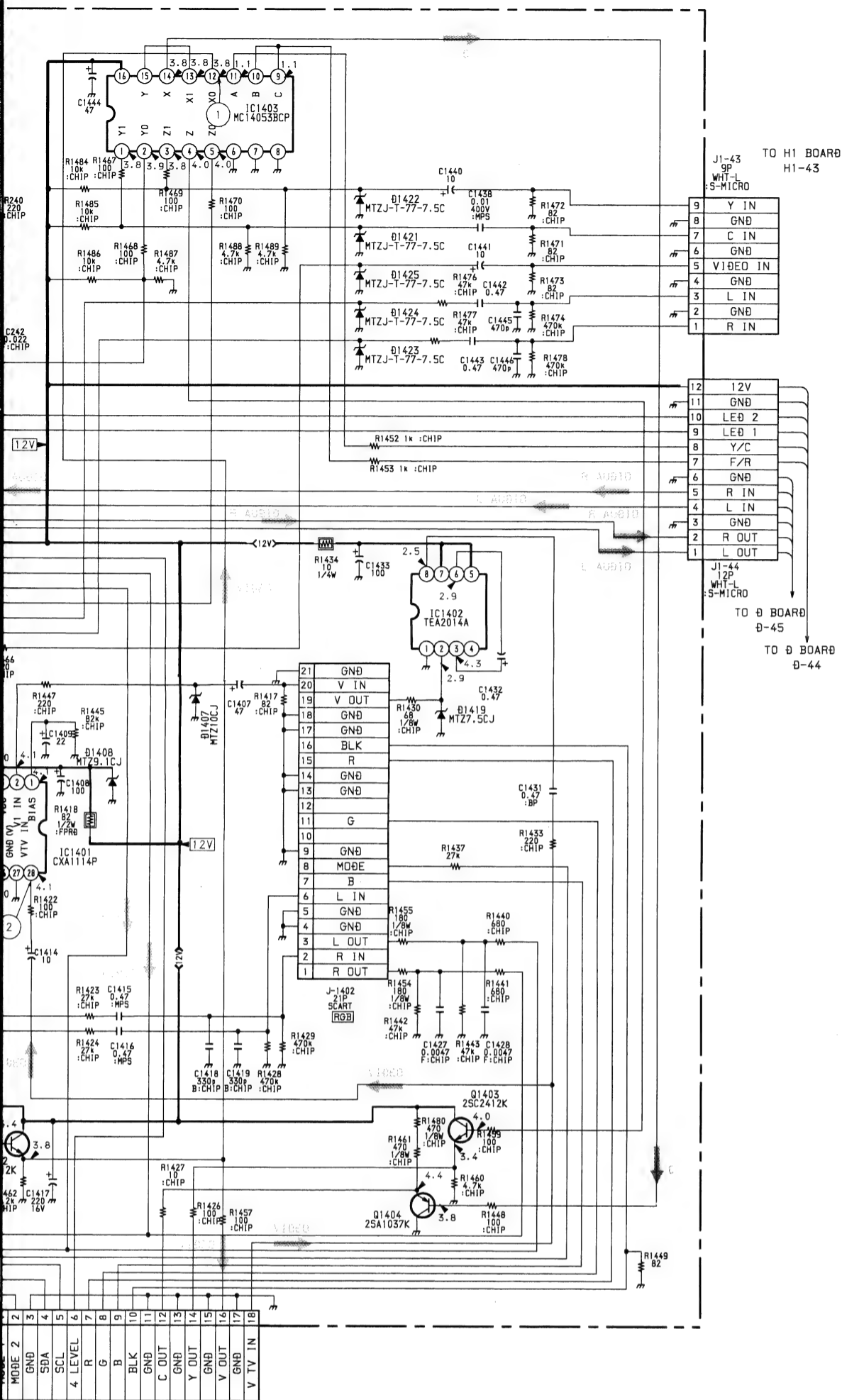




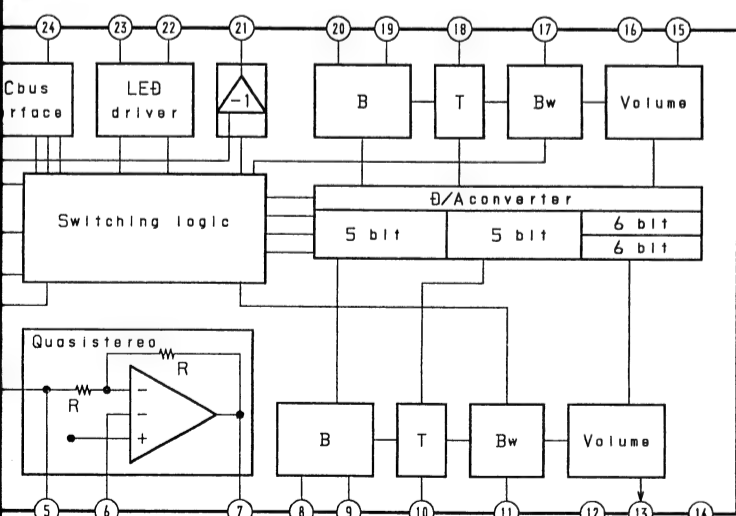
— J1 BOARD * MARK —

	KV-A2121Ø	KV-A2521Ø	KV-A2921Ø
C1512	0.0068 400V	0.0068 400V	—
C1514	0.022 250V	0.022 250V	—
C1515	820P	820P	—
R1515	680K	680K	—
R1520	470K 1/10W	470K 1/10W	390K 1/10W
R1550	JW (15)	JW (15)	1 1W

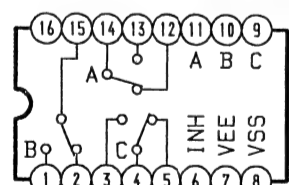




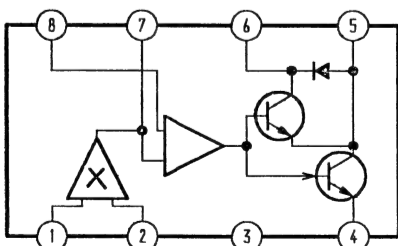
B-SS4161<UK.>-J1.



J1 BOARD IC1403 MC14053BCP



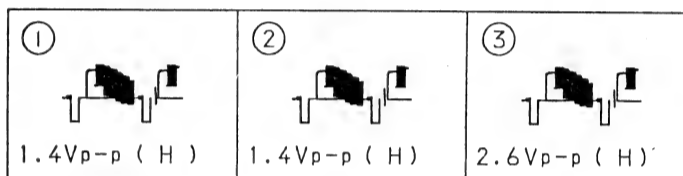
J1 BOARD IC1501 TEA2031A



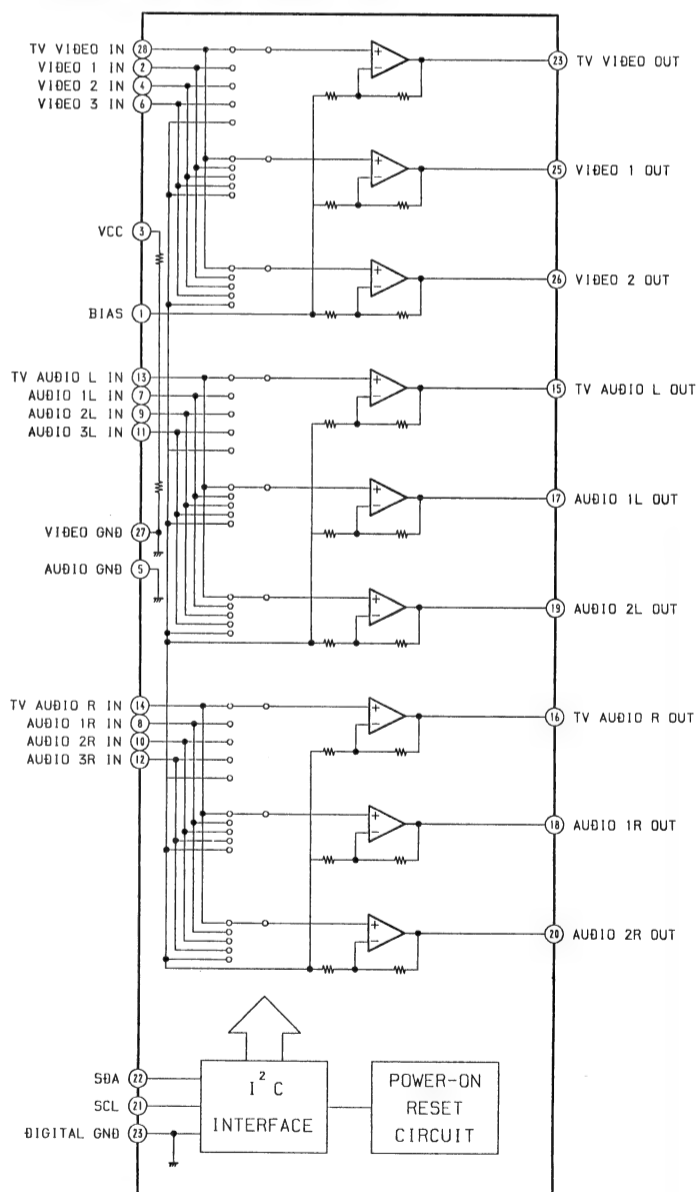
— J1 Board —

IC201	T0A6200	AUDIO CONTROL
IC1401	CXA1114P	AV SW
IC1402	TEA2014A	SCART VIDEO OUT
IC1403	MC14053BCP	COMPOSITE Y/C SW
IC1501	TEA2031A	EAST-WEST CORRECTION
Q201	25C2412K	AUDIO R BUFF
Q202	25C2412K	AUDIO L BUFF
Q1401	25A1037K	VIDEO OUT
Q1402	25C2412K	VIDEO OUT BUFF
Q1403	25C2412K	Y OUT BUFF
Q1404	25A1037K	C OUT BUFF
Ø201	MTZJ-T-77-9.1C	PROTECT
Ø202	MTZJ-T-77-9.1C	PROTECT
Ø205	MTZJ-T-77-7.5C	PROTECT
Ø206	MTZJ-T-77-7.5C	PROTECT
D1401	MTZJ-T-77-7.5C	PROTECT
D1403	MTZJ-T-77-7.5C	PROTECT
D1404	MTZJ-T-77-7.5C	PROTECT
D1405	MTZJ-T-77-7.5C	PROTECT
D1406	MTZJ-T-77-7.5C	PROTECT
D1407	MTZN-T-77-10C	PROTECT
D1408	MTZJ-T-77-9.1C	REG
D1409	MTZJ-T-77-9.1C	PROTECT
D1410	MTZJ-T-77-9.1C	PROTECT
D1415	MTZJ-T-77-7.5C	PROTECT
D1418	MTZJ-T-77-7.5C	PROTECT
D1419	MTZJ-T-77-7.5C	PROTECT
D1420	MTZJ-T-77-7.5C	PROTECT
D1421	MTZJ-T-77-7.5C	PROTECT
D1422	MTZJ-T-77-7.5C	PROTECT
D1423	MTZJ-T-77-7.5C	PROTECT
D1424	MTZJ-T-77-7.5C	PROTECT
D1425	MTZJ-T-77-7.5C	PROTECT
D1426	MTZJ-T-77-7.5C	PROTECT
D1501	RGPI0GPKG23	PROTECT
D1502	ISS133	ØCOUPLING H SIZE
D1503	ISS133	CLIPPING V PARABORA
D1504	ISS133	CLIPPING H PULSE
D1505	ISS133	REG
D1506	HZS36NB4TØ	PROTECT
D1507	ISS133	PROTECT
D1510	ISS133	REG

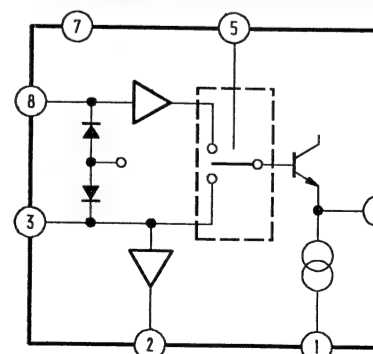
— J1 Board —





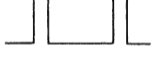



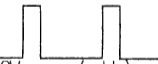

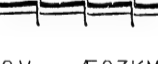
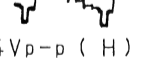
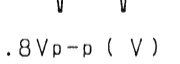
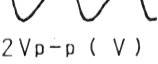
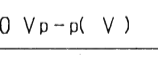
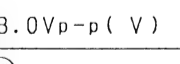
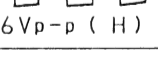


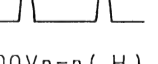



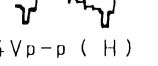
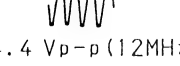
J1 BOARD IC1401 CXA1114P



J1 BOARD IC1402 TEA2014A



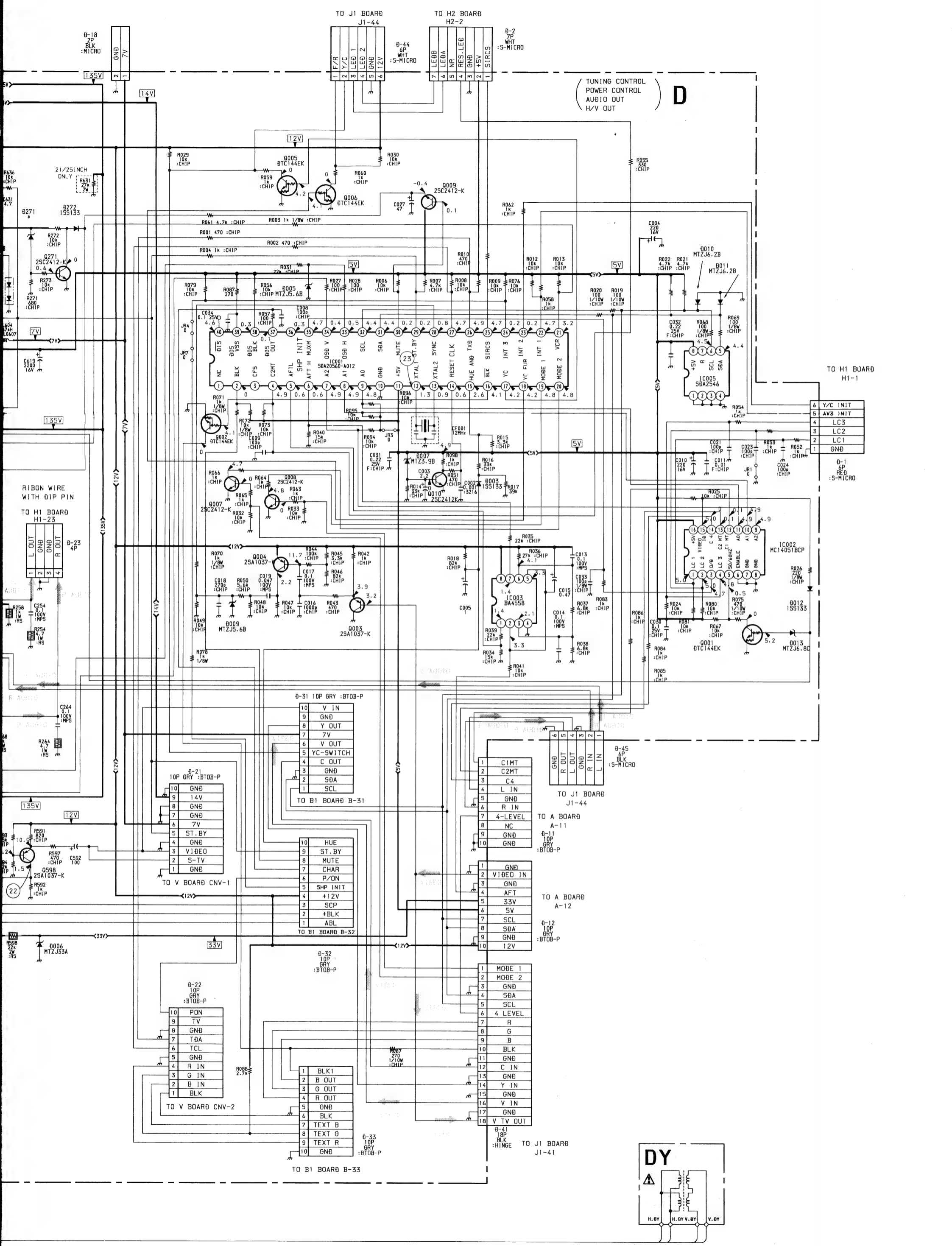
	KV-A2121B	KV-A2521B	KV-A2921B
C519	0.47	0.47	0.33
C526	27P	27P	22P
C536	4.7 16V	10 16V	10 16V
C617	220 25V	100 50V	100 50V
C620	1 63V	0.47 50V	0.47 50V
C811	1 200V	2 200V	2 200V
C815	1 200V	1 200V	0.82 200V
C817	0.0106 1.4KV	0.015 1.4KV	0.017 1.4KV
C821	680P 2KV	680P 2KV	470P 2KV
R525	1K 1/10W	1K 1/10W	—
R531	—	120K 1/10W	120K 1/10W
R532	—	—	—
R533	180 1/10W	0 1/10W	0 1/10W
R535	4.7M 1/4W	2.2M 1/4W	2.2M 1/4W
R545	39K 1/10W	22K 1/10W	22K 1/10W
R547	5.6K 1/10W	3.3K 1/10W	3.3K 1/10W
R548	1.2 1W	1 1W	1 1W
R549	470 2W	390 2W	390 2W
R552	1.2K 1W	—	—
R561	—	—	270K 1/10W
R570	—	—	680 1/10W
R600	—	1 1/4W	1 1/4W
R603	15 3W	12 3W	12 3W
R607	4.7K 1/10W	4.7K 1/10W	5.6K 1/10W
R631	27K 2W	27K 2W	—
R643	0.15 2W	0.12 2W	0.12 2W
R811	100 1W	22 2W	22 2W
R812	75K 1/2W	68K 1/2W	51K 1/2W
R825	1 1W	0.47 1W	0.47 1W
R5503	4.7 1/10W	4.7 1/10W	10 1/10W
R5506	—	—	12K 1/10W
JW202	—	—	5MM
JW203	5MM	5MM	—
JW204	5MM	5MM	—
JW205	—	—	5MM
JW206	5MM	5MM	—
JW207	5MM	5MM	—
JW216	15MM	15MM	—
JW229	10MM	10MM	—
L801	—	—	3.9MH
Ø88	—	—	3P CONNECTOR
Ø271	MTZJ12C	MTZJ13B	MTZJ13B
Ø506	ØA204K	ØA204K	—
Ø509	—	1SS133	1SS133
Ø514	JW (5)	JW (5)	1SS133
Ø515	—	—	1SS133
Ø807	—	ERC06-15S	ERC06-15S
Ø808	ERØ28-Ø8S	ERØ29-Ø8J	ERØ29-Ø8J

①  1.4Vp-p (H)	②  3.0Vp-p (V)	③  5.0Vp-p (V)
④  3.0Vp-p (V)	⑤  4.4 Vp-p (H)	⑥  11.0Vp-p (H)
⑦  15.0Vp-p (H)	⑧  3.6Vp-p (H)	⑨  0.8Vp-p (503KMz)
⑩  1.4Vp-p (H)	⑪  0.8Vp-p (V)	⑫  2.2Vp-p (V)
⑬  32.0 Vp-p(V)	⑭  28.0Vp-p(V)	⑮  3.6Vp-p (H)
⑯  250Vp-p (H)	⑰  12.0Vp-p(H)	⑱  1400Vp-p (H)
⑲  220Vp-p (H)	⑳  7.0Vp-p (V)	㉑  54.0Vp-p (V)
㉒  1.4Vp-p (H)	㉓  4.4 Vp-p (12MHz)	

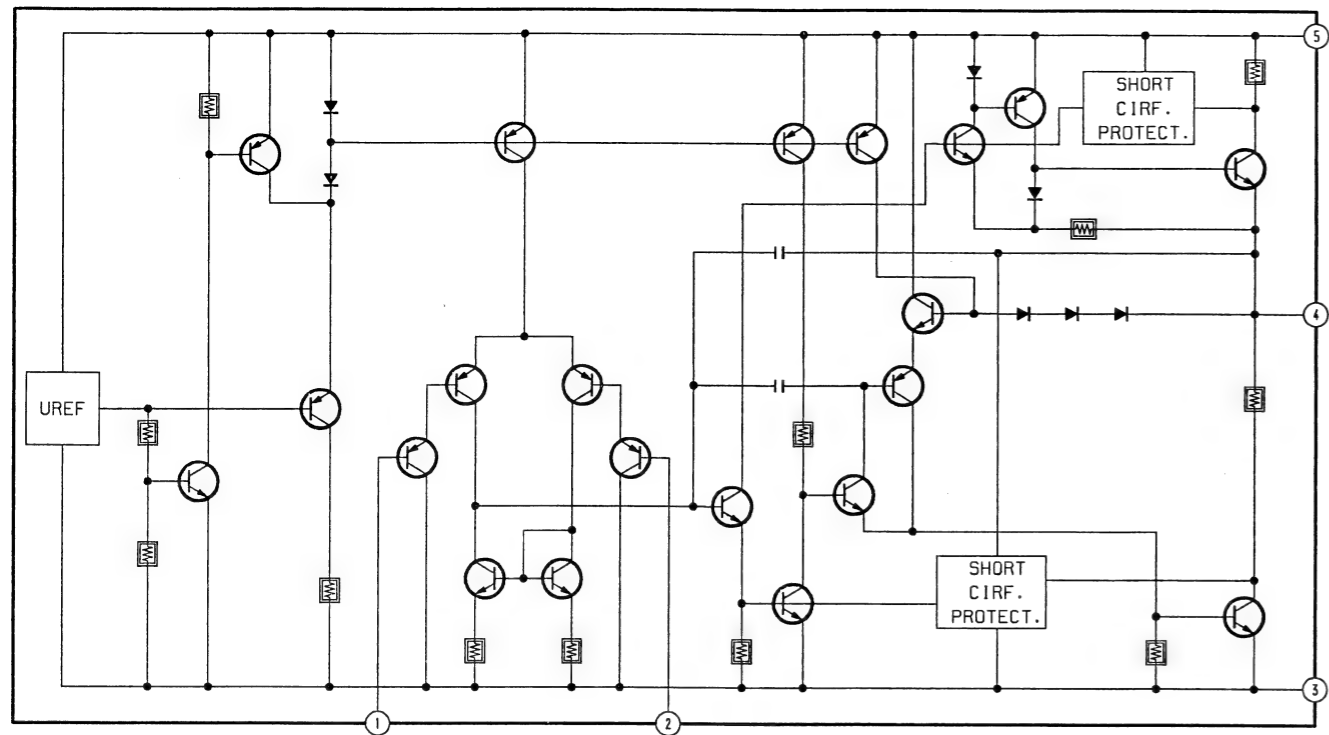
1C001	SØA20560-A012	TUNING CTL
1C002	MC14051BCP	ON SCREEN DISPLAY
1C003	BA4558	AFT COMPARATOR
1C005	SØA2546	MY MEMORY
1C251	TØA2050	AUDIO OUT (L)
1C261	TØA2050	AUDIO OUT (R)
1C501	TEA2028B	DEFLECTION PROCESSOR
1C502	TØA8170	V OUT
1C601	TEA2260	PRIMARY SMRS CTL
1C604	TEA7605	+5V REG
1C608	MC7812CT	+12V REG
Q001	ØTC144EK	50/60Hz SW
Q002	ØTC144EK	BLK SW
Q003	2SA1037K	SYNC SEPARATOR
Q004	2SA1037K	SYNC SEPARATOR
Q005	ØTC144EK	Y/C SW
Q006	ØTC144EK	FRONT/REAR SW
Q007	2SC2412K	MODE 2 SWITCH
Q008	2SC2412K	MODE 1 SWITCH
Q009	2SC2412K	MUTE SW
Q010	2SC2412K	RESET
Q251	2SC2412K	AUDIO MUTE
Q261	2SC2412K	AUDIO MUTE
Q271	2SC2412K	VOLTAGE ØTECT
Q502	2SA1037K	CONSTANT CURRENT SOURCE
Q505	2SØ774	V CENT
Q506	2SØ734	V CENT
Q507	2SA1037K	CANAL +BLK
Q598	2SA1037K	VIDEO AMP
Q601	2SØ1357T114EF	STBY SW
Q602	2SØ1548	REG OUT
Q603	2SØ1357T114EF	STBY SW
Q604	2SA1037K	FAST ON/OFF
Q605	2SC2412K	STBY SW
Q606	2SC2412K	STBY SW
Q607	2SØ2096-EF	+12V REG
Q608	2SC2412K	STBY SW
Q609	2SØ789-3	STBY SW
Q801	2SC2412K	ABL AMP
Q804	2SØ1941	H OUT
Q805	2SC2688	H ØRIVER

Ø001	MTZJ6.8C	PROTECT
Ø002	MTZJ6.8C	PROTECT
Ø003	1SS133	HUE CTL
Ø005	MTZJ5.6B	PROTECT
Ø006	MTZJ33A	VC VOLTAGE REGULATION
Ø007	MTZJ3.9B	PROTECT RESET
Ø009	MTZJ5.6B	CLIPPING SYNC LEVEL
Ø010	MTZJ6.2B	PROTECT
Ø011	MTZJ6.2B	PROTECT
Ø012	1SS133	PROTECT
Ø013	MTZJ6.8C	PROTECT
Ø271	RD12ES-B2	VOLTAGE ØTECT (21 INCH ONLY)
Ø271	MTZJ13B	VOLTAGE ØTECT (25/29 INCH ONLY)
Ø272	1SS133	ØCOUPING MUTE AUDIO
Ø501	1SS133	SOFT START
Ø504	GPØ8ØPKG23	V PULSE OUT
Ø506	ØA204K	CURRENT REG (21/25 INCH ONLY)
Ø508	1SS133	CANAL +BLK LEVEL
Ø509	1SS133T-77	V LIN (25/29 INCH ONLY)
Ø511	GPØ8ØPKG23	PROTECT
Ø512	GPØ8ØPKG23	PROTECT
Ø513	MTZJ4.7B	PROTECT
Ø514	1SS133T-77	PROTECT (29 INCH ONLY)
Ø515	1SS133T-77	PROTECT (29 INCH ONLY)
Ø601	Ø4SØ60L-F	AC RECT
Ø602	RGP1ØGPKG23	REF RECT
Ø603	GPØ8ØPKG23	SMPS ØRIVE 1
Ø604	GPØ8ØPKG23	SMPS ØRIVE 2
Ø605	GPØ8ØPKG23	SMPS ØRIVE 3
Ø606	RGP1ØGPKG23	+12V RECT
Ø607	RGP1ØGPKG23	REF RECT
Ø608	ERC25-Ø6S	PLUSE CLIPPER
Ø609	MTZJ33A	FAST ON/OFF
Ø610	CTU-12S	+14V RECT
Ø611	ERØ29-Ø8J	+135V RECT
Ø612	CTU-12S	+7V RECT
Ø613	RGP15J-6Ø4ØG23	AF V RECT-1
Ø614	RGP15J-6Ø4ØG23	AF V RECT-2
Ø616	MTZJ6.2B	+12V REG
Ø617	1SS133	PROTECT
Ø618	MTZJ5.6B	+12V REF
Ø619	MTZJ33A	FAST ON/OFF-2
Ø620	ØA204K	+12V REF
Ø621	MTZJ33A	FAST ON/OFF-3
Ø622	1SS133	PROTECT
Ø623	1SS133	ØCOUPING STBY
Ø624	1SS133	ØCOUPING ØTBY
Ø630	MTZJ15A	+12V RECT
Ø801	RGP1ØGPKG23	+27V RECT
Ø802	RGP1ØGPKG23	+200V RECT
Ø803	RGPØ2-17PKG23	G2 RECT
Ø804	GPØ8ØPKG23	H CENTER-1
Ø805	GPØ8ØPKG23	H CENTER-2
Ø806	ERCØ6-15S	H ØAMPER-1
Ø807	ERCØ6-15S	H ØAMPER-2 (25/29 INCH ONLY)
Ø808	ERØ28-Ø8S	PIN ØAMPER (21 INCH ONLY)
Ø808	ERØ29-Ø8S	PIN ØAMPER (25/29 INCH ONLY)

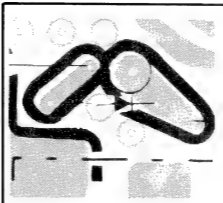
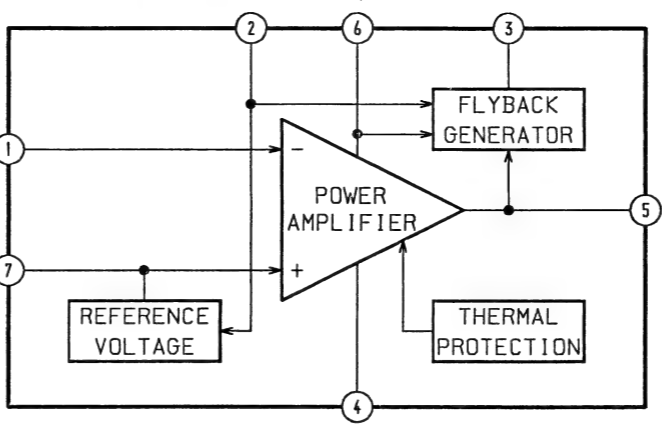
	KV-A2121B	KV-A2521B	KV-A2921B
V901	A51JXH61X	A59JWC61X	A68JYL61X



D BOARD IC251/261 TDA2050

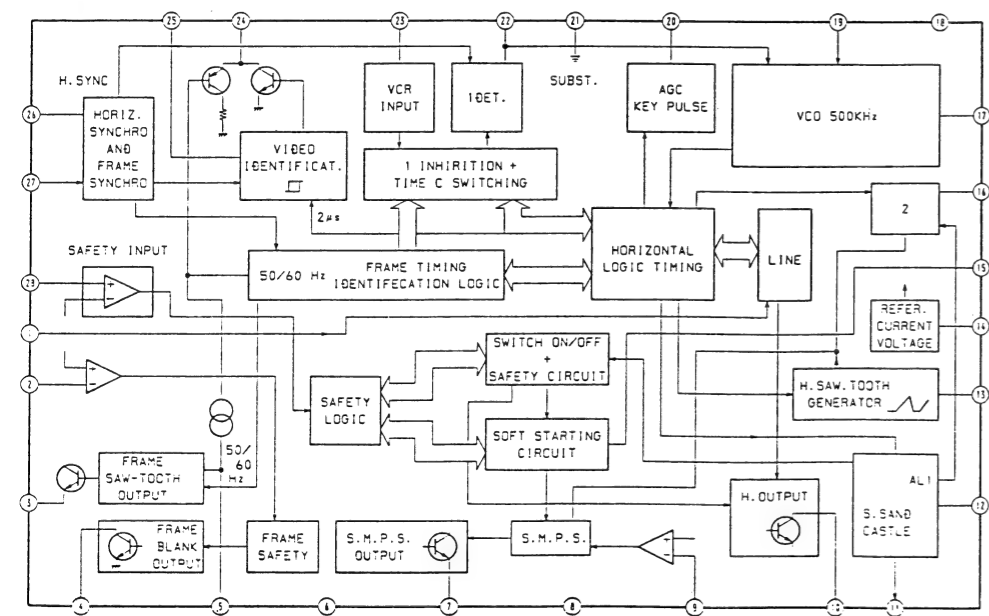


D BOARD IC502 TDA8170

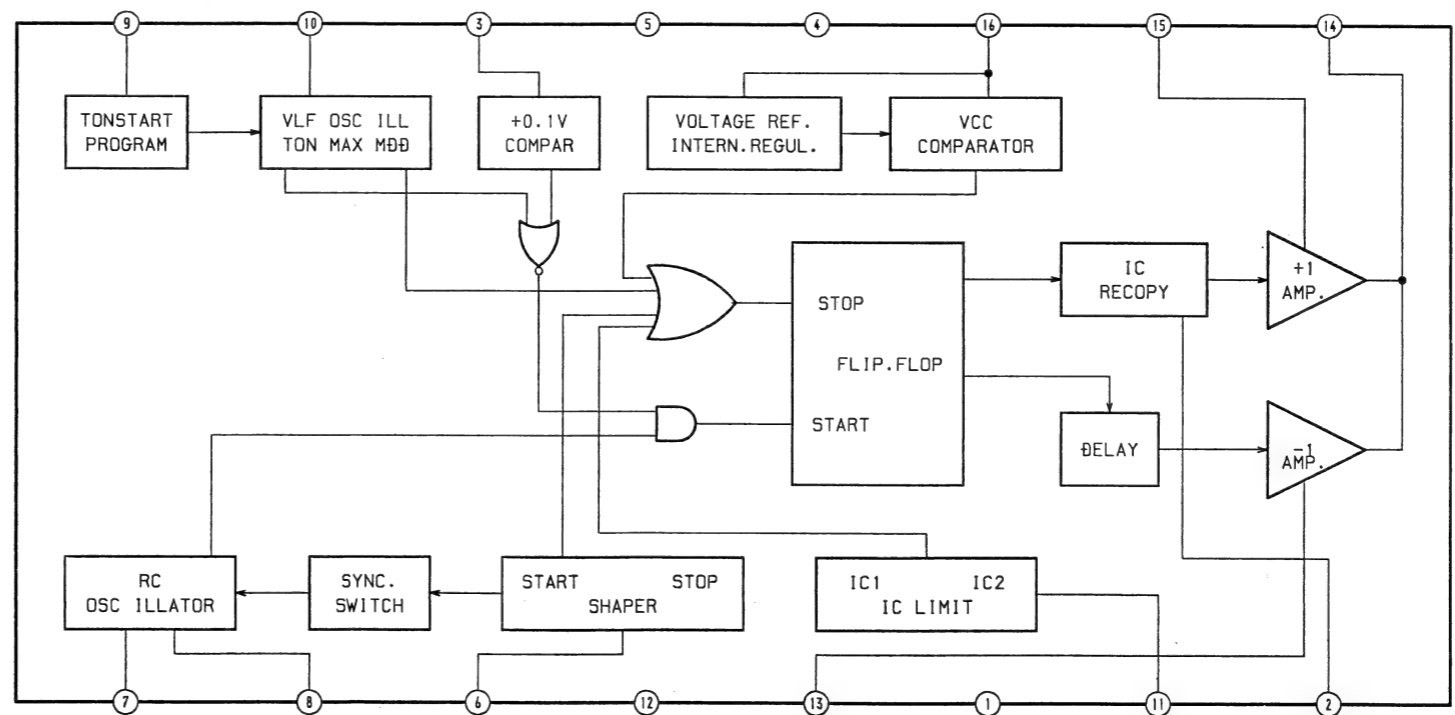


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

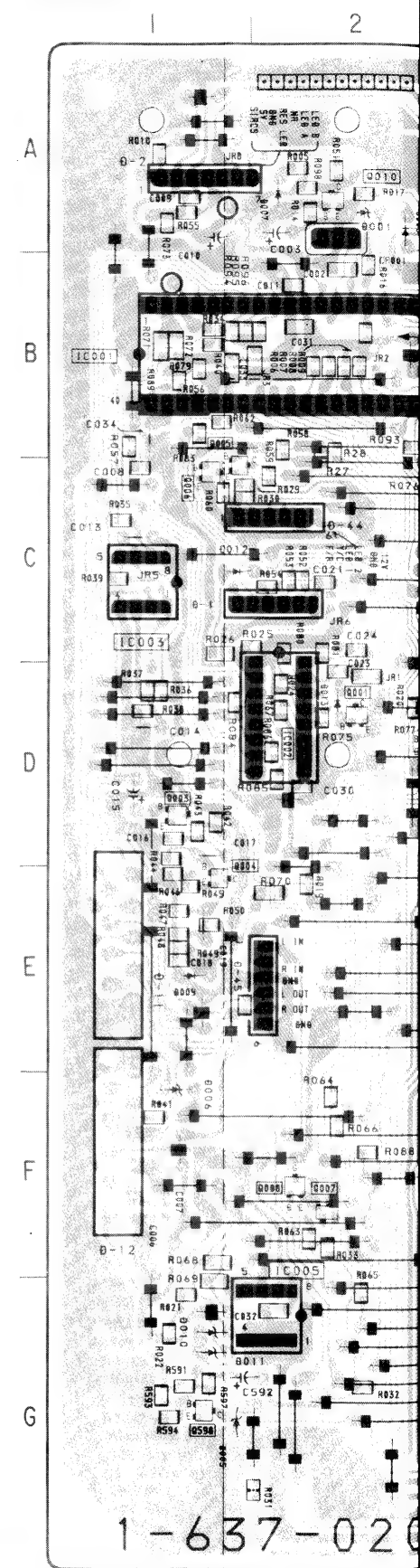
D BOARD IC501 TEA2028B

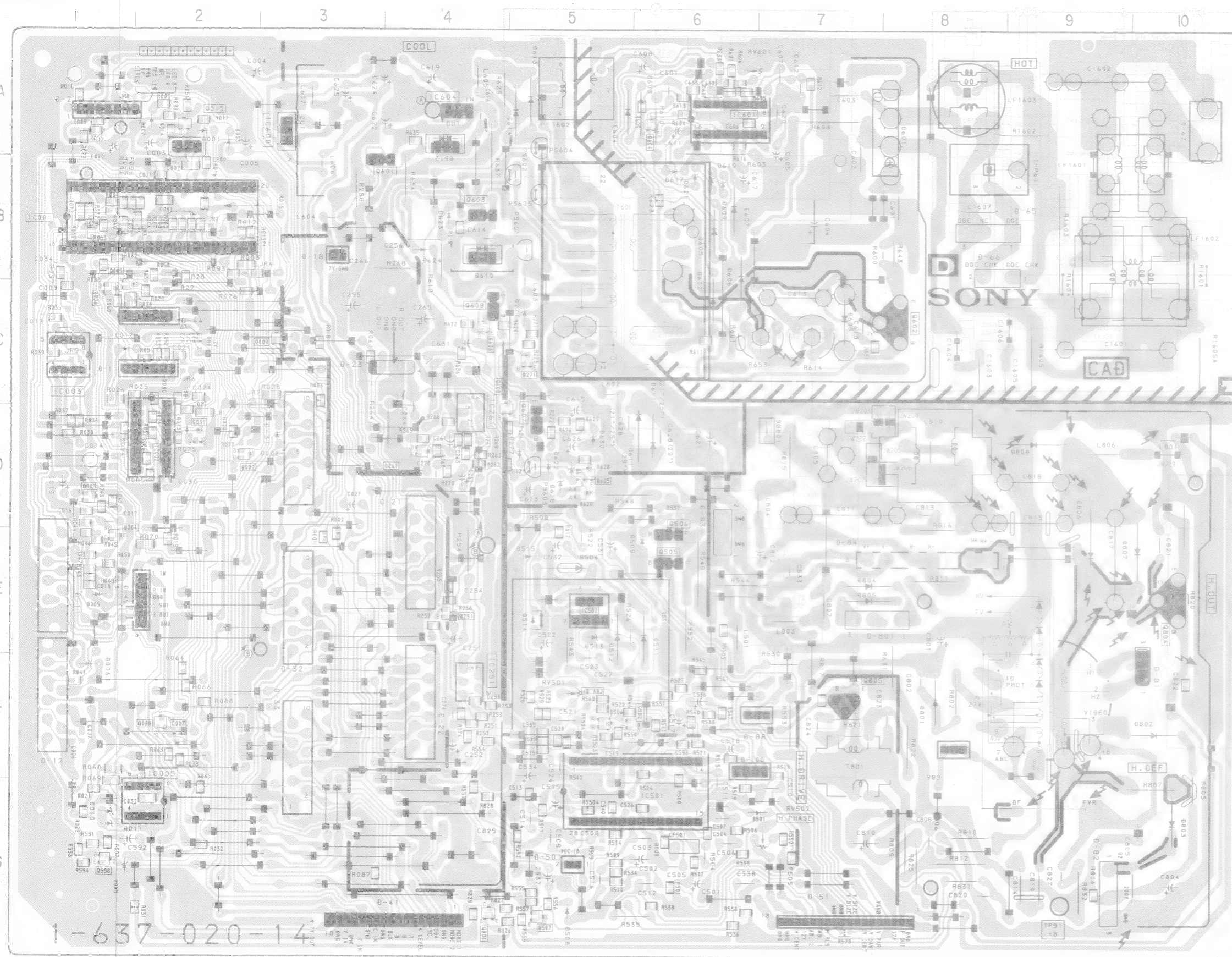


D BOARD IC601 TEA2260



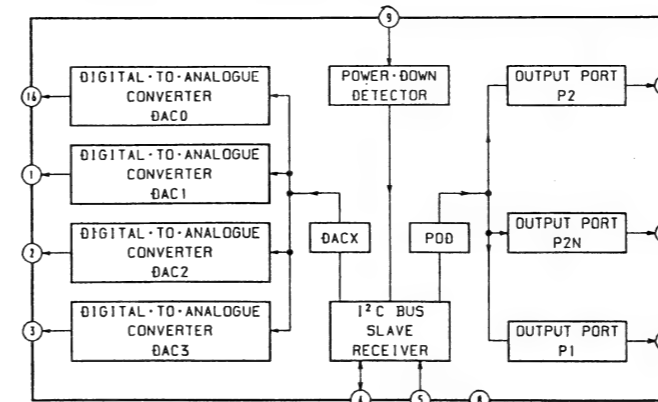
D TUNING CONTROL, POWER CONTROL, AUDIO OUT, H/V OUT
— D Board —



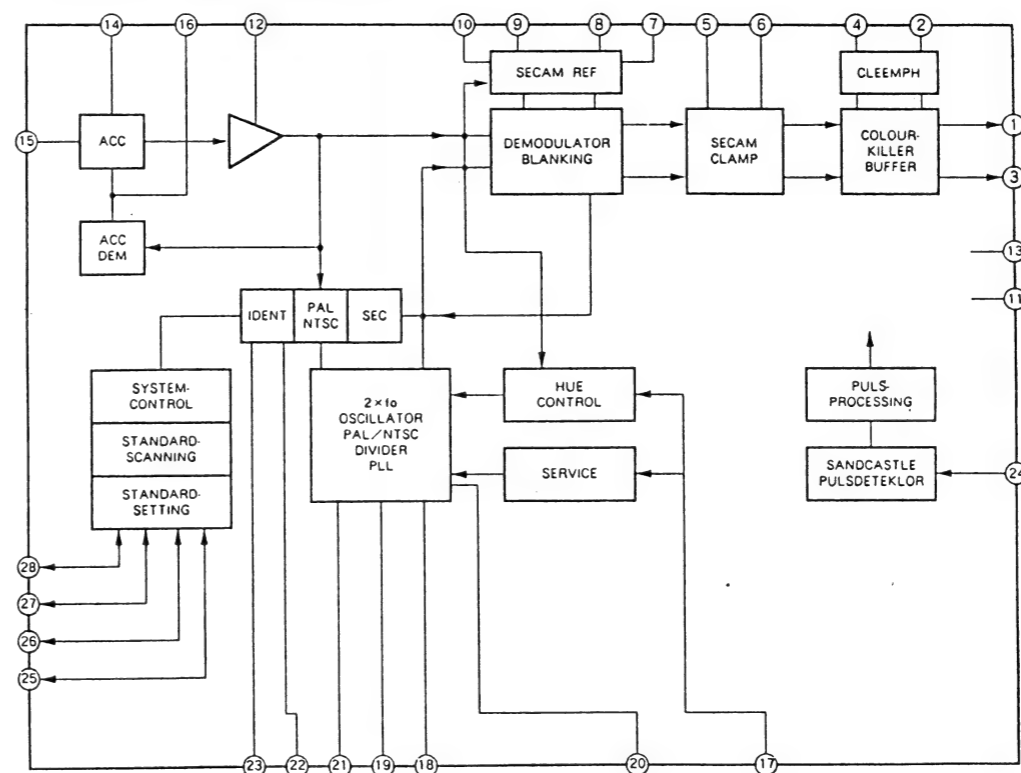


IC		D012	C-1
IC001	B-2	D013	D-2
IC002	D-2	D271	C-5
IC003	C-1	D272	D-5
IC005	G-2	D501	G-7
IC251	F-4	D504	E-5
IC261	D-4	D506	F-5
IC501	G-6	D508	G-5
IC502	E-5	D509	E-6
IC601	A-6	D511	E-6
IC604	A-4	D512	E-5
IC608	A-3	D513	E-5
		D514	E-5
		D515	E-5
		D601	A-8
		D602	C-6
		D603	A-6
		D604	A-5
		D605	B-6
		D606	B-6
		D607	B-6
		D608	C-7
		D609	B-6
		D610	B-4
		D611	D-6
		D612	A-4
		D613	A-5
		D614	A-5
		D616	D-5
		D617	B-6
		D618	D-5
		D619	B-6
		D620	D-5
		D621	B-6
		D622	D-5
		D623	B-4
		D624	B-4
		D630	D-5
		D801	F-8
		D802	F-10
		D803	G-10
		D804	E-7
		D805	E-7
		D806	E-9
		D807	E-10
		D808	D-9
TRANSISTOR		VARIABLE RESISTOR	
Q001	D-2	RV501	F-5
Q002	D-2	RV502	G-7
Q003	D-1	RV601	A-6
Q004	E-1		
Q005	C-1		
Q006	C-1		
Q007	F-2		
Q008	F-2		
Q009	C-3		
Q010	A-2		
Q251	E-4		
Q261	D-4		
Q271	C-5		
Q502	F-2		
Q505	E-6		
Q506	D-6		
Q507	G-5		
Q598	G-1		
Q601	B-3		
Q602	C-8		
Q603	B-4		
Q604	A-6		
Q605	D-5		
Q606	C-4		
Q607	D-5		
Q608	D-4		
Q609	C-4		
Q801	G-4		
Q804	E-10		
Q805	F-7		
DIODE		TP	
D001	A-2	TP91	G-9
D002	D-3		
D003	A-2		
D005	G-1		
D006	F-1		
D007	A-2		
D009	E-1		
D010	G-1		
D011	G-1		

B1 BOARD IC302 TDA8442-N3



B1 BOARD IC304 TDA4650WP



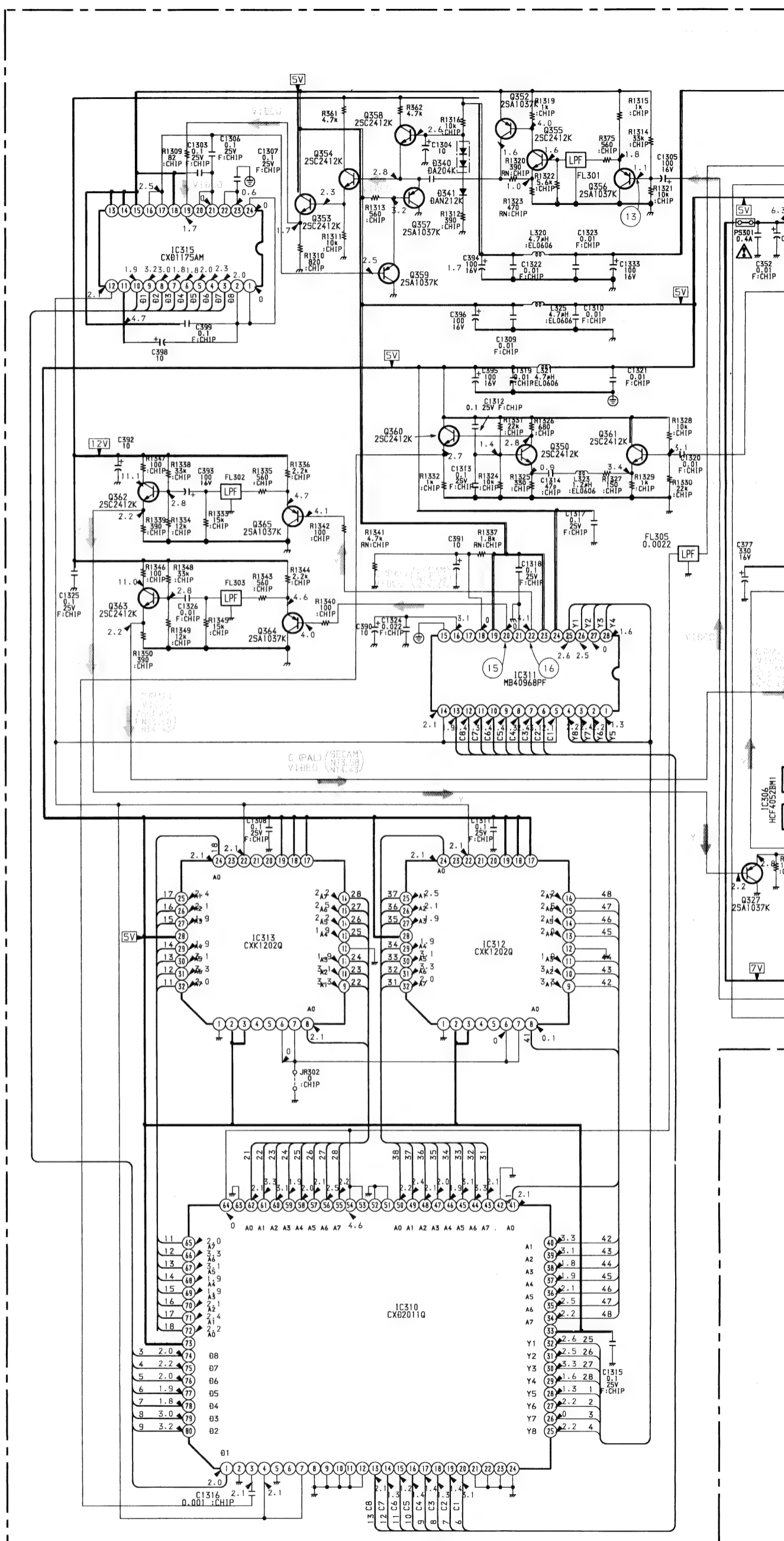
— B1 Board —

IC301	T0A4580-V7	VIDEO PROCESSOR
IC302	T0A8442N3	D/A CONVERTER
IC303	T0A4660T	1H DELAY
IC304	T0A4650WP	COLOR PROCESSOR
IC305	PC24M05HF	REGULATOR
IC306	HCF4052BM	Y/C SW
IC308	CX20061	Y SW
IC310	CX02011Q-TL	COMB CONTROL
IC311	MB40968PF	D/A CONVERTER
IC312	CXK12020-T4	MEMORY
IC313	CXK12020-T4	MEMORY
IC315	CX01175AM-T5	A/D CONVERTER

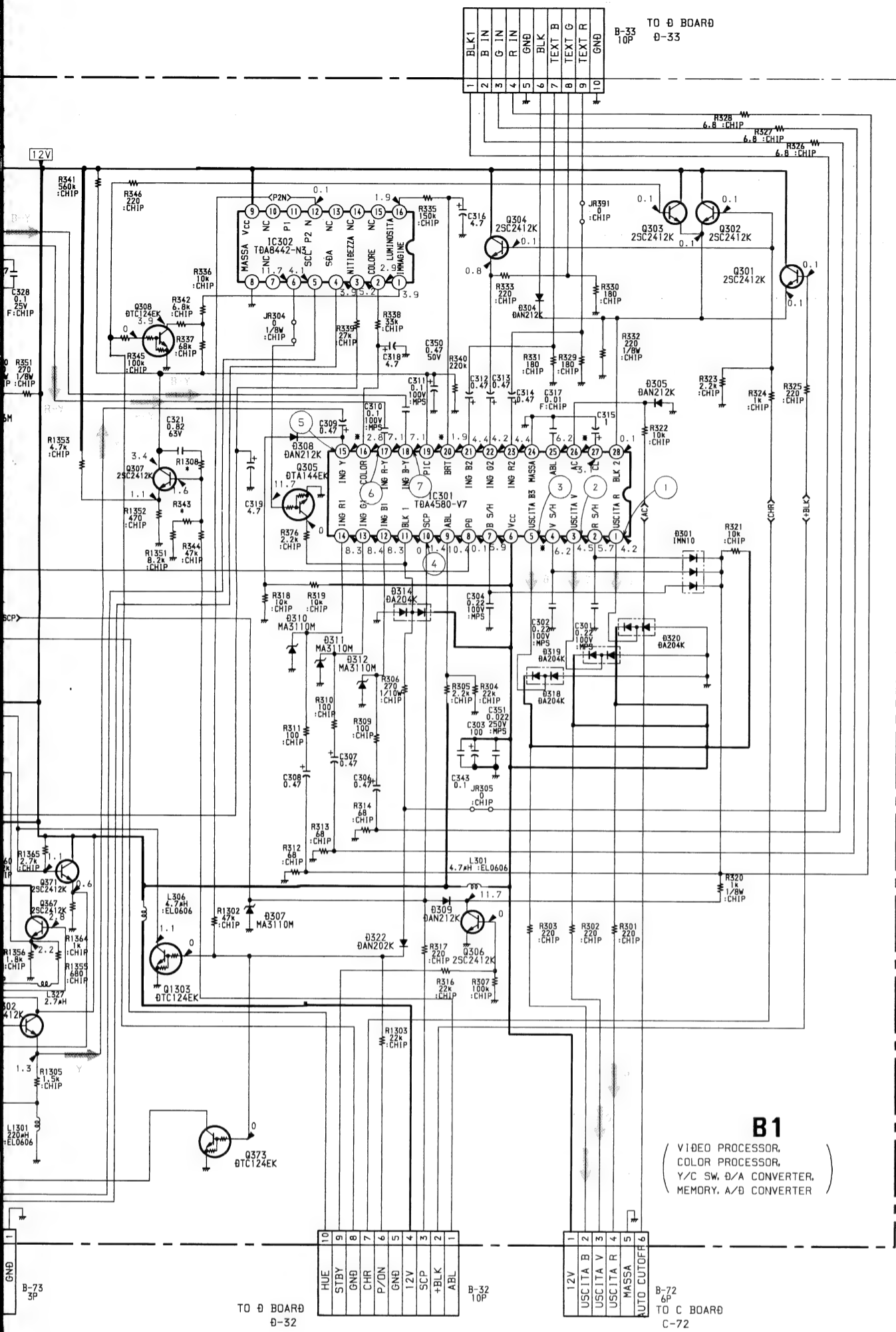
Q301	25C2412K	CANAL +BLK
Q302	25C2412K	ON SCREEN DISPLAY SW
Q303	25C2412K	FAS PICTURE MUTE SW
Q304	25C2412K	ON SCREEN DISPLAY SW
Q305	0TA144EK	ANTI PRIORITY SCART
Q306	25C2412K	STBY SW
Q307	25C2412K	ABL
Q308	0TC124EK	MUTE
Q310	0TC124EK	SECAM SW
Q311	0TC124EK	SECAM SW
Q320	25C2412K	HUE BUFFER
Q321	25A1037K	CLK AMP3
Q322	25A1037K	CLK AMP2
Q323	25C2412K	CLK AMP1
Q324	25C2412K	CLK BUFFER
Q327	25A1037K	Y OUT
Q328	25A1037K	VIDEO IN
Q329	25A1037K	Y IN
Q330	25C2412K	VIDEO BUFFER
Q331	25A1037K	C OUT
Q332	25A1037K	C IN
Q333	0TC124EK	Y/C SW
Q334	0TC124EK	Y SW
Q335	25C2412K	SECAM SW
Q336	25C2412K	NTSC (3.58) SW
Q337	25C2412K	NTSC (4.43) SW
Q338	25A1037K	Y BUFFER
Q339	25C2412K	Y BUFFER
Q340	25C2412K	Y BUFFER
Q341	25C2412K	SECAM TRAP SW
Q342	25C2412K	NTSC TRAP SW
Q343	25C2412K	C OUT
Q344	25C2412K	SECAM SW
Q345	25C2412K	PAL/SECAM SW
Q346	25C2412K	Y IN
Q347	25C2412K	PAL SW
Q348	0TC124EK	NTSC (3.58) SW
Q350	25C2412K	CLK AMP
Q352	25A1037K	VIDEO AMP
Q353	25C2412K	BUFFER

Q354	25C2412K	BUFFER
Q355	25C2412K	VIDEO AMP
Q356	25A1037K	VIDEO BUFFER
Q357	25A1037K	CLAMP BIAS
Q358	25C2412K	VIDEO CLAMP
Q359	25A1037K	CLAMP BIAS
Q360	25C2412K	CLK BUFFER
Q361	25C2412K	CLK AMP
Q362	25C2412K	Y BUFFER
Q363	25C2412K	C BUFFER
Q364	25A1037K	C BUFFER
Q365	25A1037K	Y BUFFER
Q366	25C2412K	SHP BUFFER
Q367	25C2412K	Y BUFFER
Q368	25C2412K	SHP AMP
Q369	25C2412K	SHP AMP
Q370	25C2412K	SHP AMP
Q371	25C2412K	VM BUFFER
Q372	25C2412K	VM AMP
Q373	0TC124EK	Y BUFFER
Q1301	0TC124EK	Y BUFFER
Q1302	25C2412K	Y BUFFER
Q1303	0TC124EK	VM MUTE

D301	1MN10	ACO AT ATBY
D304	DAN212K	PROTECT
D305	DAN212K	PROTECT
D307	MA3110M	PROTECT
D308	DAN212K	PROTECT
D309	DAN212K	PROTECT
D310	MA3110M	PROTECT
D311	MA3110M	PROTECT
D312	MA3110M	PROTECT
D314	UA204K	PROTECT
D318	DA204K	PROTECT
D319	DA204K	PROTECT
D320	DA204K	PROTECT
D321	MA3056	REG
D322	DAN202K	PROTECT
D330	DAN212K	BIAS
D331	DAP202K	Y/C SW
D333	1MN10	SYSTEM SW
D336	DAN202K	CORRECT SW
D340	DA204K	VIDEO AMP
D341	DAN212K	VIDEO AMP

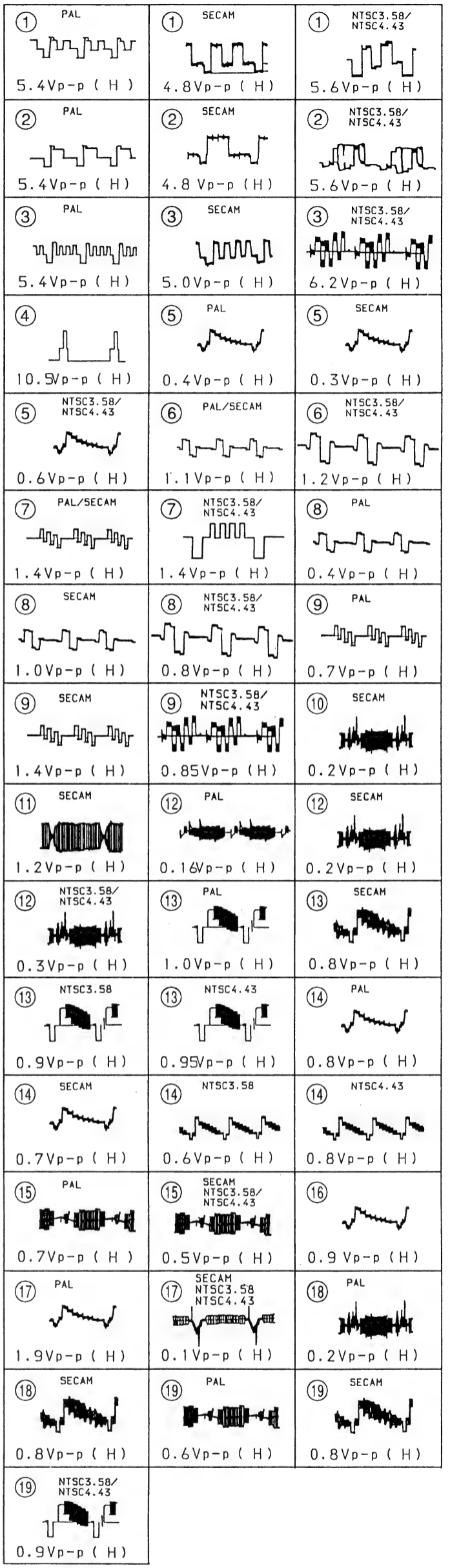


B-SS4161<UK>-B1.



B1
(VIDEO PROCESSOR, COLOR PROCESSOR, Y/C SW, D/A CONVERTER, MEMORY, A/D CONVERTER)

— B1 Board —



— B1 BOARD * MARK —

	KV-A2121D	KV-A2521D	KV-A2921D
B-73	OPEN	OPEN	3P
R343	220 1/10W	270 1/10W	1.2K 1/10W
R1308	0 1/10W	0 1/10W	4.7K 1/10W

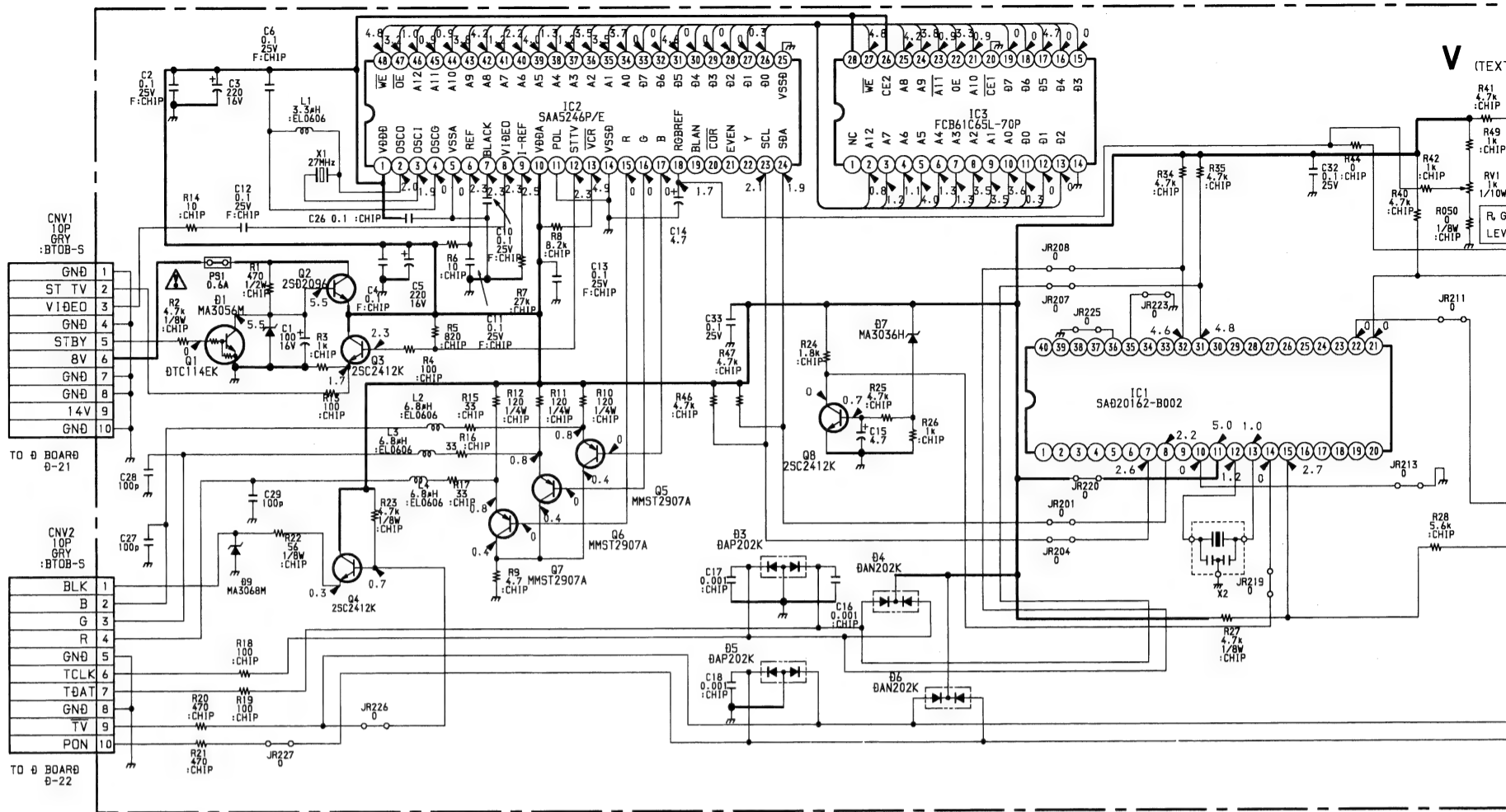
— B1 Board —

As to the voltage value shown by the make ✕ on the Schematic Diagram, see the another list.

IC·NO	PIN·NO	PAL	SECAM	NTSC 3.38	NTSC 4.43
IC301	(5)	5.1	4.8	4.8	4.8
	(15)	7.3	7.0	7.0	7.0
	(19)	3.1	3.4	3.8	3.4
	(26)	6.6	6.6	6.0	6.3
IC304	(3)	6.8	6.8	6.9	6.8
	(5)	9.9	10.1	9.9	9.9
	(7)	4.3	3.5	4.6	4.6
	(8)	3.4	3.0	3.4	3.4
	(9)	3.4	3.0	3.4	3.4
	(10)	4.3	3.4	4.6	4.6
	(21)	2.3	3.1	3.1	2.3
	(22)	5.6	5.6	5.6	7.4
	(23)	7.5	7.5	5.7	5.7
	(25)	0	1.4	5.9	5.9
	(26)	0	0	0	0
	(27)	0	5.9	0	0
	(28)	5.9	0	0	0

Q·NO		PAL	SECAM	NTSC 3.38	NTSC 4.43
Q338	B	2.6	3.9	3.9	3.9
	E	3.3	4.6	4.6	4.6
Q339	B	3.2	4.6	4.6	4.6
	E	3.6	3.9	3.9	3.9
Q341	B	0	0.6	0.4	0.1
	C	11.8	0	11.6	11.6
Q342	B	0	0	0.4	0
	C	11.7	0	11.7	11.7
Q343	B	3.2	5.3	5.3	5.3
	E	2.6	4.6	4.7	4.7
Q344	B	0	5.4	1.0	0.1
	E	4.0	4.8	1.5	4.5
Q345	B	4.6	0.1	1.9	5.0
	E	4.0	4.4	1.4	4.4
Q347	B	0.6	0	0	0
	C	0.1	11.9	11.9	11.9
Q348	B	0.1	0.1	1.0	0.1
	C	0.4	0.2	0.2	0.4

— V Board —



— V Board —

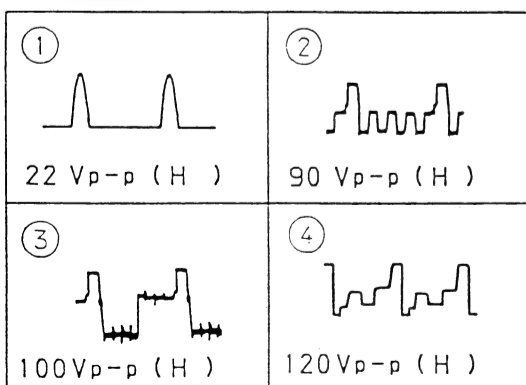
B-SS4172<

IC1	MAB8461P-W208	MICRO-CONT
IC2	SAA5246E	IVT
IC3	FCB61C65L-70P	STATIC-RAM
Q1	DTCT14EK	STAND BY
Q2	2S02096	5V REG
Q3	2SC2412K	SYNC BUFFER
Q4	2SC2412K	BLK OUT
Q5	MMST2907A	B OUT
Q6	MMST2907A	G OUT
Q7	MMST2907A	R OUT
Q8	2SC2412K	P ON SW
01	MA3056M	5V REG
03	DAP202K	PROTECT
04	DAN202K	PROTECT
05	DAP202K	PROTECT
06	DAN202K	PROTECT
07	MA3036H	PROTECT
09	MA3068M	PROTECT

— C Board —

Q702	JCS01	R DRIVE
Q703	BF871	R OUT
Q704	2SA10910	ACO MEASURING
Q705	JCS01	G DRIVE
Q706	BF871	G OUT
Q707	2SA10910	ACO MEASURING
Q708	JCS01	B DRIVE
Q709	BF871	B OUT
Q710	2SA10910	ACO MEASURING
0701	MTZJ9.1C	PROTECT
0702	ISS133	PROTECT
0703	ISS133	PROTECT
0704	ISS133	PROTECT
0705	ISS133	PROTECT
0706	ISS133	PROTECT
0707	ISS133	PROTECT
0708	ISS133	PROTECT
0709	ISS133	PROTECT
0710	ISS133	PROTECT
0711	RGP10G	HEATING VOLTAGE REC
0713	ISS133	PROTECT

— C Board —



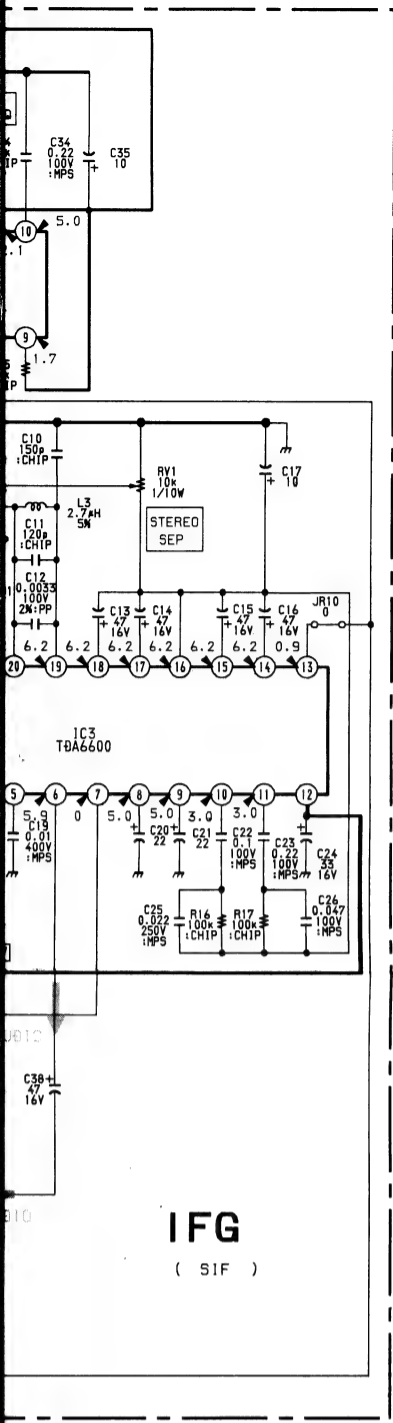
— C Board —

As to the voltage value shown by the make * on the Schematic Diagram, see the another list.

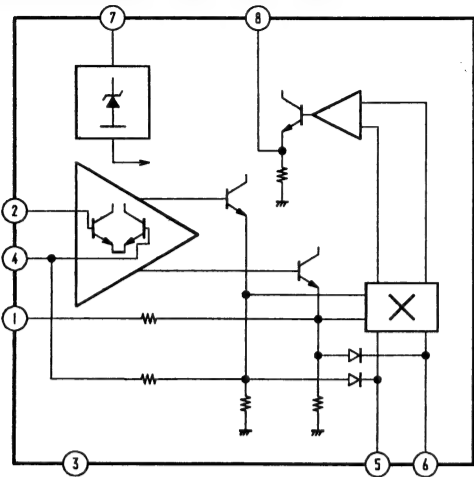
		KV-A21210	KV-A25210	KV-A29210
Q702	B	3.8		4.2
	E	3.2		3.6
Q703	C	153.8		145.8
	B	153.8		145.8
	C	4.7		5.3
	E	149.8		138.9
Q706	C	149.0		145.5
	B	149.0		145.5
	C	4.9		6.0
	E	144.3		141.6
Q708	B	5.1		4.7
	E	4.5		4.1
Q709	C	151.0		131.5
	B	151.0		131.5
	C	6.7		7.2
	E	145.8		126.9
SCREEN	MIN	170.9		201
	MAX	907		926

— C BOARD * MARK —

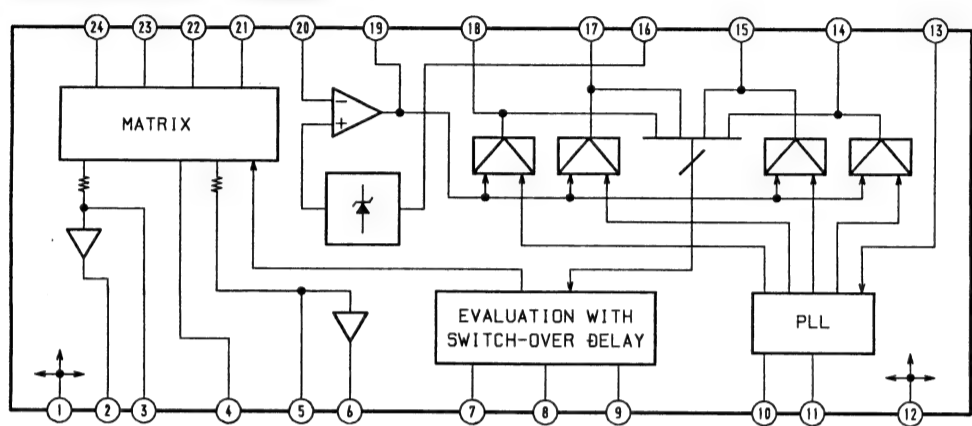
	KV-A21210	KV-A25210
C705	180P	220P
R707	430	390
R710	100K 1/4W 1%	68K 1/4W 1%
R713	160K 1/4W 1%	120K 1/4W 1%
R737	390K 1/4W 1%	820K 1/4W 1%



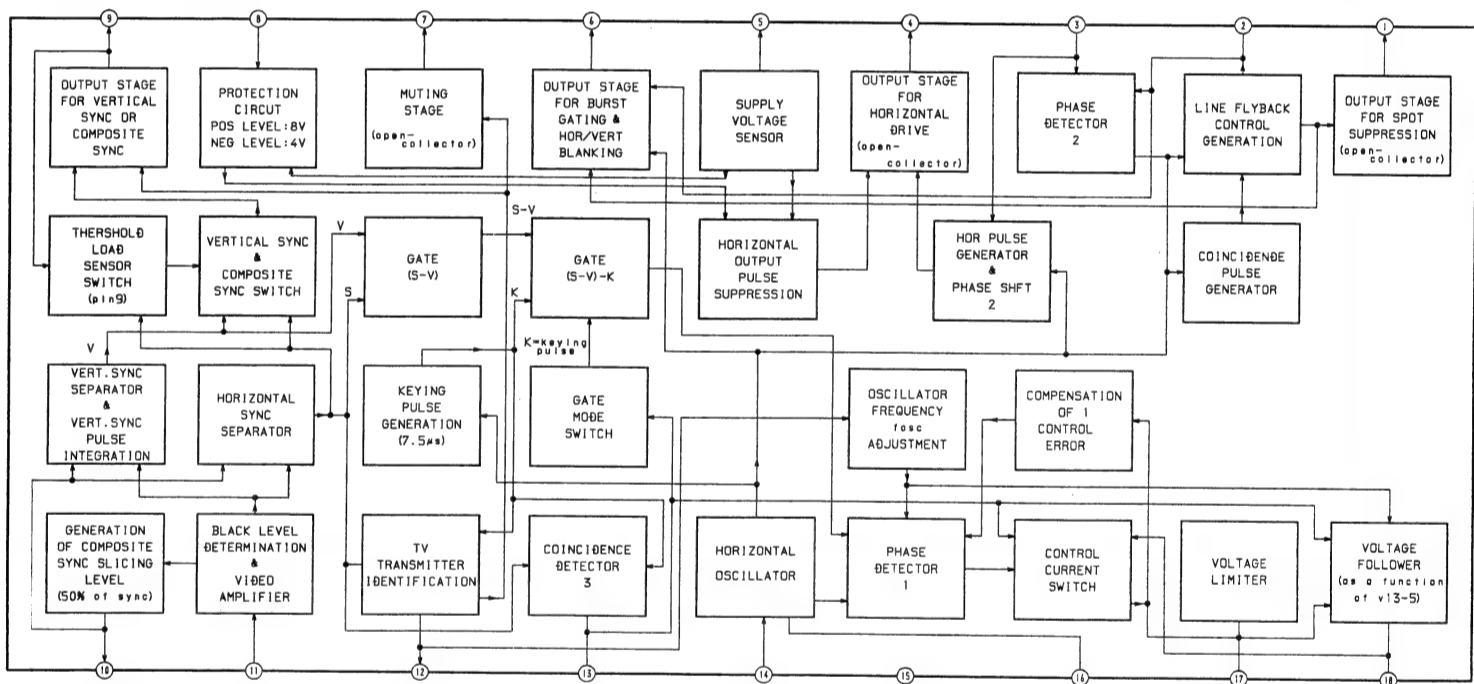
IFG BOARD IC1/IC2 TBA129



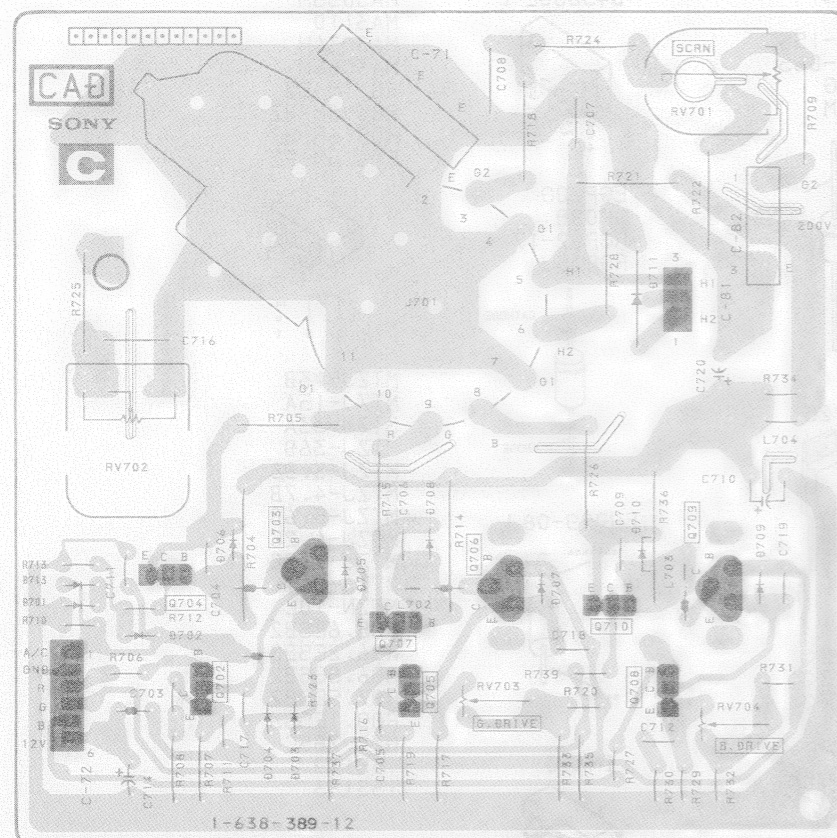
IFG BOARD IC3 TDA6600



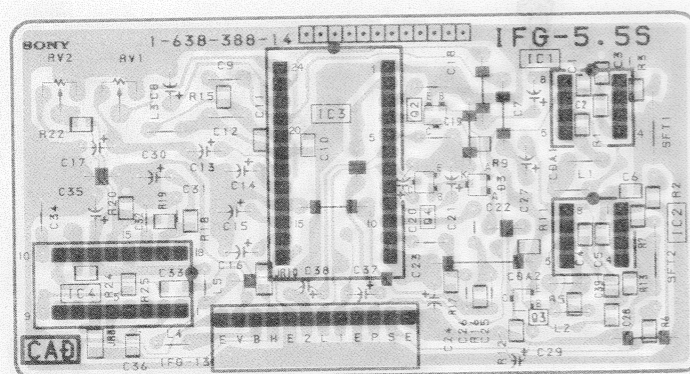
IFG BOARD IC4 TDA2595



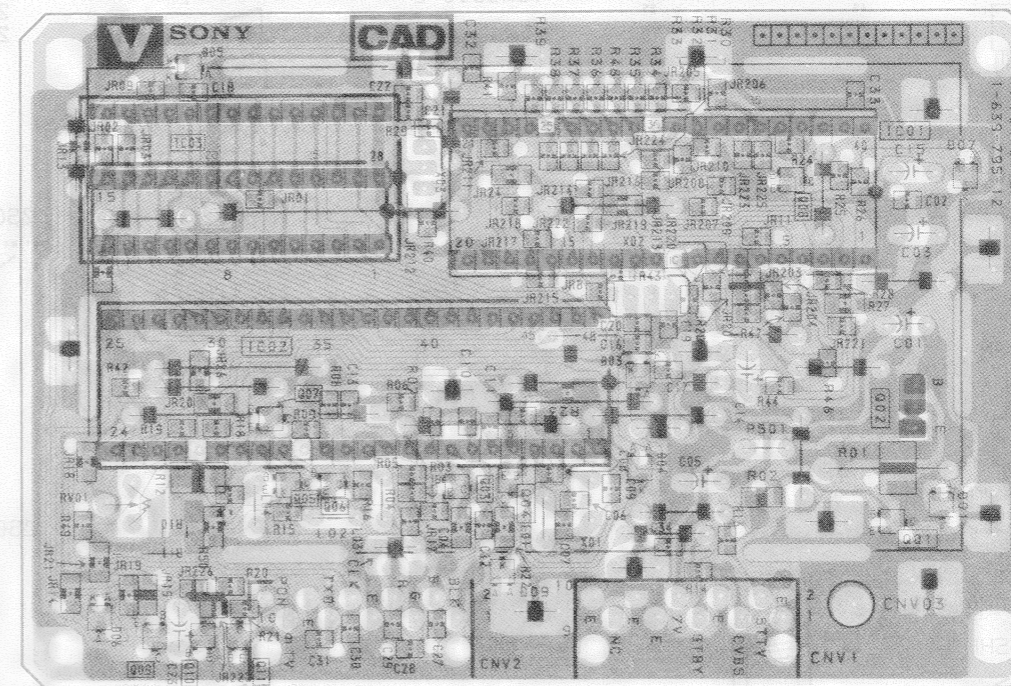
— C Board —



— IFG Board —



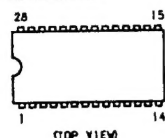
V [TELE TEXT]



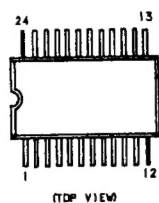
- : pattern from the side which enables seeing.
- : pattern of the rear side.

5-4. SEMICONDUCTORS

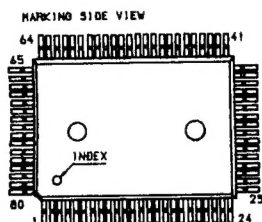
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FCB61C65-70P
SAA5246P/E
SDA20162-A002
TDA4580-V6
TDA6200
TEA2028B



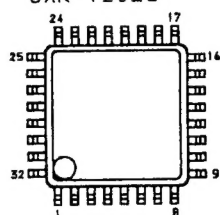
CXD1175AM



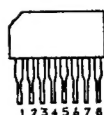
CXD2011Q



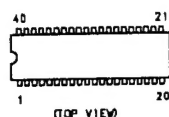
CXK-1202Q



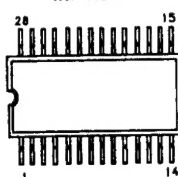
CX20061



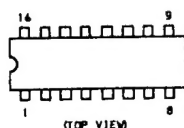
FCB61C65-70P
SDA20560-AE1C



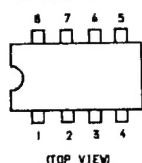
MB40968PF



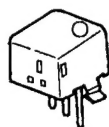
MC14053BCP
PCF8574
TC4051BPHB
TDA4660T
TDA8442-N3
TEA2260



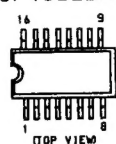
RC4558P
SDA2546
TBA129
TEA2014A
TEA2031A



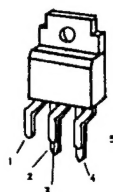
SBX1610-11



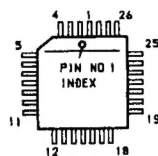
HCF4052BM



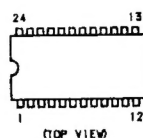
TDA2050



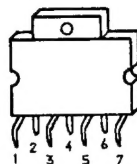
TDA4650WP



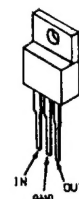
TDA6600-2



TDA8170



TEA7605
TYA7812CT
 μ PC24M05HF



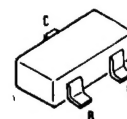
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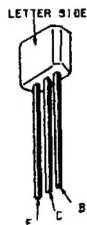
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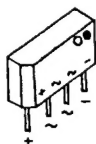
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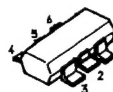


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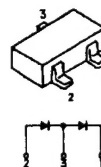


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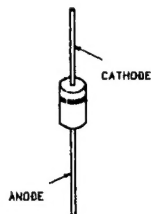
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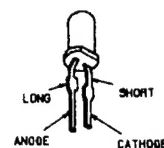


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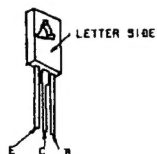


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MTZJ-3.9B
MTZJ-33A
MTZJ-36D
MTZJ-6.2B
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RD6.8ES-B2
RD7.5ES-B2
RD9.1ES-B3
UZ4.7BSC
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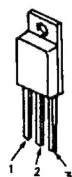
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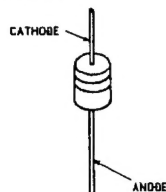
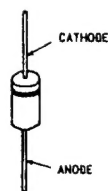
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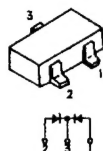
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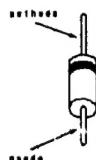
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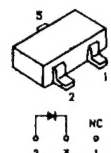
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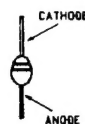
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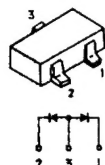
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RØ3.6M-B2
RØ5.6M-B2
RØ6.8M-B2



U05G



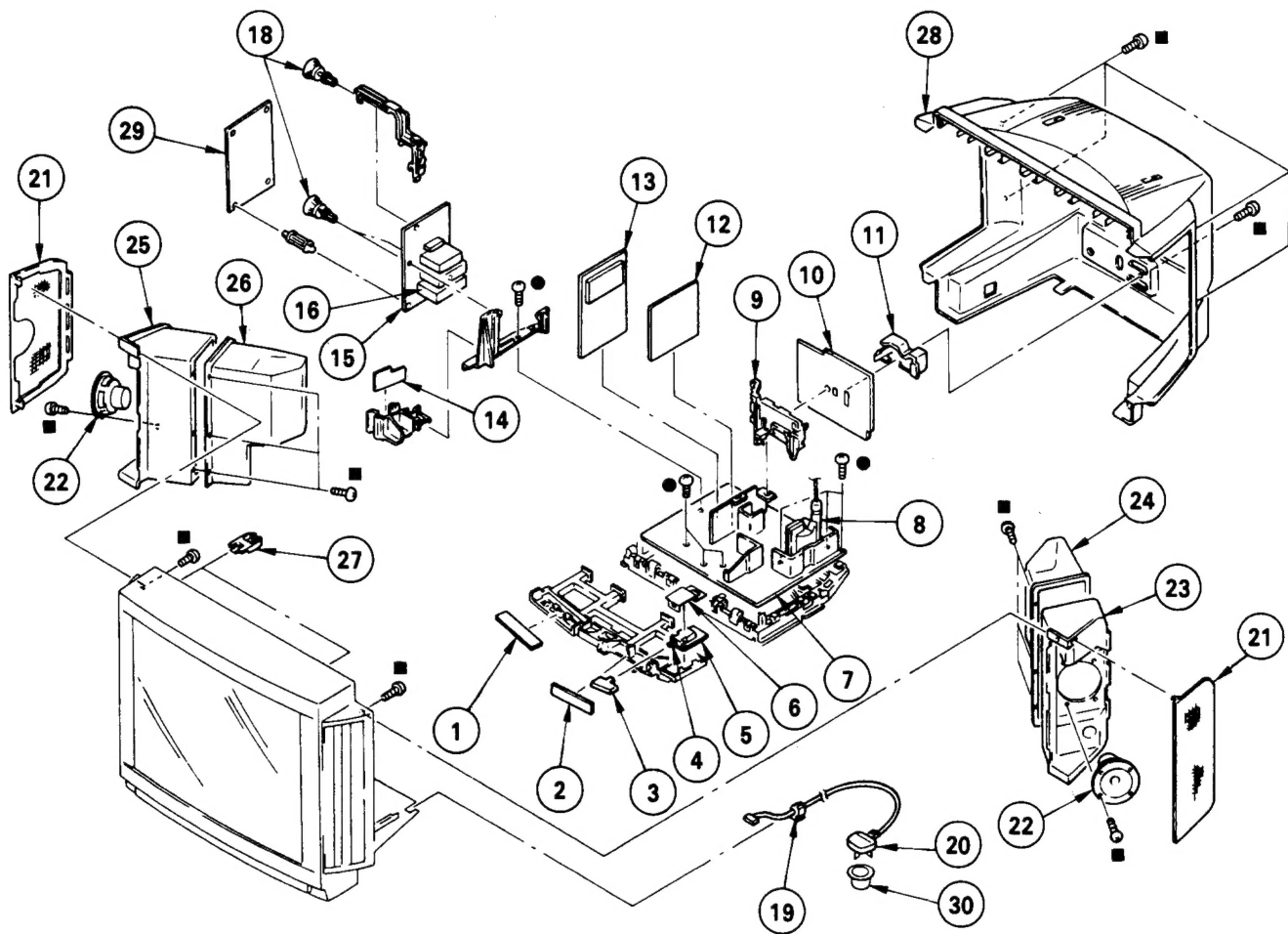
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6-1. CHASSIS

● : BVTP3 × 12 7-685-648-79

■ : BVTP4 × 16 7-685-663-79



6-2. PICTURE TUBE

■ : BVTF4 × 16 7-685-663-79

○ : BVTF3 × 8 7-685-646-79

